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ROCKS and MINERALS

PETER ZODAC, Editor and Publisher
America's Oldest and Most Versatile
Magazine for the Mineralogist, Geol-
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Published Bi-Monthly

OFFICIAL JOURNAL



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CHIPS FROM THE QUARRY

COMING EVENTS

May 27, 29, 1960 — Timpanogos Gem & Mineral Society will hold a rock show at the Armory Bldg., Provo, Utah. For information write: Mrs. Alice Beardal, 37 N. 1810 W., Provo, Utah.

June 17-19, 1960 — Rocky Mountain Federation of Mineralogical Societies. Convention and show. Civic Auditorium, Albuquerque, N. Mexico. Albuquerque Rockhound Club and Albuquerque Gem and Mineral Club, hosts.

June 23, 24, 1960 — Gem City Rockhound Mineral Association will hold a Mineral Rock and Lapidary Show at Knox Hall, 250 W. 7th St., Erie, Pa. For further information contact Miss Miriam Kuhns, 336 E. 21st St., Erie, Pa.

June 25, 26, 1960 — Heart of Connecticut Gem and Mineral Show will be held in American Legion Building, Moodus, Conn. For information contact Mrs. Robert P. Gallant, Box 32, Moodus, Conn.

July 2, 4, 1960 — Annual Convention and Show of the Rex Young Society of Rockhounds will be held at the Goshen County Fair Grounds, Torrington, Wyo. For dealer space contact: Charles Bass, Jay Em, Wyo.

July 8, 9, 10, 1960 — AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES AND CALIFORNIA FEDERATION OF MINERALOGICAL SOCIETIES. 1960 National Gem and Mineral Show and Convention. Redwood Acres, 9th District Fairgrounds, Eureka, California. HUMBOLDT GEM AND MINERAL SOCIETY, HOST. For information contact: Mattie E. Ross, Publicity Ch., P.O. Box 336, Fortuna, Calif.

July 23, 24, 1960 — 4th Annual Rock Hound Round-up of the Pine Tree Gem & Mineral Club, Swift River, Maine. For information Contact Freda Thomas, Roxbury, Me.

Aug. 4-6, 1960 — Eastern Federation of Mineralogical and Lapidary Societies, Municipal Auditorium, Asheville, N. C. Host: Southern Appalachian Mineral Society. For information contact: Chamber of Commerce, Asheville, N. C. (Field Trips, Aug. 7-13).

Aug. 10-13, 1960 — 2nd Annual Spruce Pine Mineral & Gem Festival, Spruce Pine, N. C., Sponsored by Chamber of Commerce, Spruce Pine, N. C.

Aug. 13, and 14, 1960 — The Colorado Mineral Society is sponsoring a gem show this summer, if possible will you please publish the following notice in ROCKS AND MINERALS:

The Denver Gem and Mineral Fair to be held August 13 and 14, 1960.

Time: Saturday August 13th, 10:00 A.M. to 9:00 P.M.

Sunday August 14th, 10:00 A.M. to 6:00 P.M.

Place: Jefferson County Fairgrounds, 15200 West 6th Ave. (U.S. Highway #6 between Denver and Golden, Colo.) There will be no admission fee. There will be Dealers, Competitive and Non-Competitive Displays. Muriel Colburn, Corres. Sec'y, 2821 So. Jackson St., Denver 10, 1960.

Oct. 22, 23, 1960 — Mineralogical Society of Pennsylvania Symposium (Mineral and Gem Show) will be held at LaSalle College, Philadelphia, Pa., For further information contact J. David Dear, 1829 W. 73rd St., Philadelphia 26, Pa.

Oct. 29-30, 1960 — Silver Anniversary Show of the San Francisco Gem & Mineral Society, Inc., will be held at the Scottish Rite Auditorium, Van Ness & Sutter St., San Francisco, Calif. For further information contact Mrs. Carol Reinecke, Corr. Sec'y, 4134 Judah St., San Francisco 22, Calif.

NOTICE—CONVENTION OFFICERS

Margaret Oveson, Box Z, North Grafton, Mass., has offered a good suggestion for Conventions. Her suggestion is—that a table be set aside at Conventions for the identification of minerals for beginners.

A very good suggestion—R&M is heartily in favor of it. Furthermore some local minerals should also be displayed—not the best but those of average quality. And let beginners handle them—examine them—and compare them with those they may have brought along.

PHOTO ON FRONT COVER

We are indebted to Carl D. Osborne, prop. Osborne Photo Service, Newland, N. C., for the photo used on the front cover of this issue. In his letter, dated Feb. 23, 1960, Mr. Osborne writes:—

"Herewith is a photo for your front cover. I was in Carter County, Tenn., a few days ago 'Rockhounding' and staggered onto a small pocket of some beautifully colored rock. It was white sandstone. The lighter lines are a bright yellow and the darker lines a deep red. The specimen pictured is approximately 9 x 13 inches. I call it Nature's Abstract."

PETROGLYPHS

By RONALD L. IVES

2075 Harvard St., Palo Alto, Calif.

Recent field investigations in the western part of the United States have disclosed hundreds of sites where the rocks are covered with ancient inscriptions, many of them presumably by Indians, or by their earlier predecessors, about whom we still know too little. In a few locations, more modern inscriptions, dating from the early explorations of the continent, have been found.

These inscriptions, or petroglyphs ("rock writings"), are quite commonly located in out-of-the-way places, such as at desert water holes, crossings of ancient trails, or hunting sites. The more modern ones, such as the groups of signatures at Inscription Rock, New Mexico (now El Morro National Monument), are quite

clear to us, as they are written in languages which we can understand. Many of these, like the notation by Bishop Elizacochea (Fig. 1), confirm written historical accounts, and are in turn confirmed by them.

The other inscriptions, of Indian origin, are in characters that we understand poorly, if at all. Many of these petroglyphs are geometrical patterns, similar to pottery patterns and blanket designs. Some of them are distinctive enough so that we can tell with some confidence the tribal origin of the makers. Other patterns are so common that they tell us almost nothing. A few are identical to patterns on Greek and Chinese vases, from which various ideas about

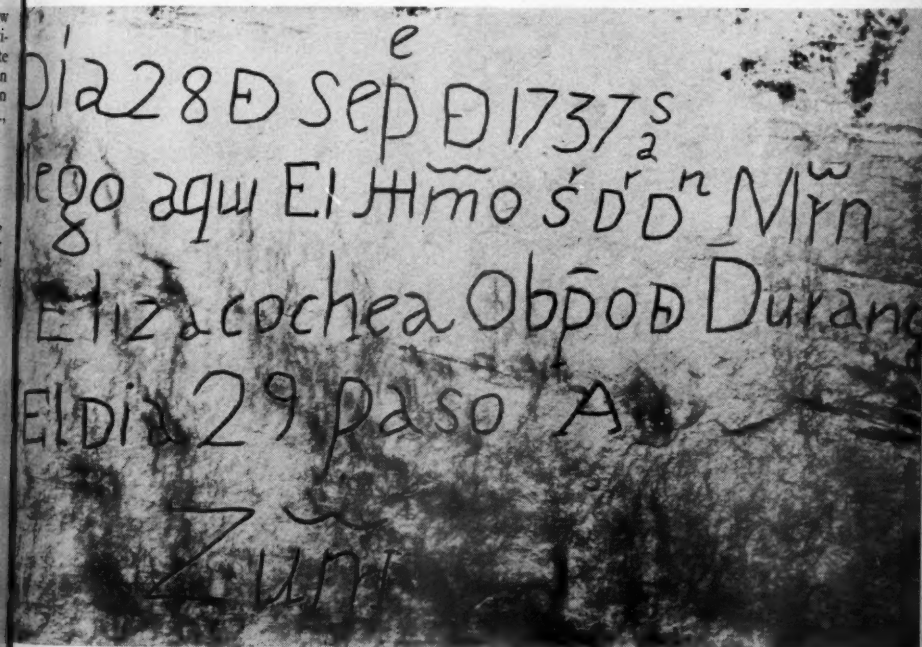


Fig. 1 Record of Bishop Martin Elizacochea's visit to New Mexico. Full text, translated, is "28th day of September, 1737, the most illustrious Senor Doctor Don Martin Elizacochea, Bishop of Durango, came here, and on the 28th day went to Zuni". National Park Service photograph by George Grant.

pre-Columbian trade with Greece and China have arisen. Many of these interesting theories are probably wrong. A group of such patterns, photographed by Pedro Bravo, of Ajo, Arizona, at a petroglyph site 13 miles southwest of Caborca, Sonora, Mexico, comprises Fig. 2.

Other patterns include figures of men, animals, weapons and symbols probably representing astronomical objects. These are arranged in various ways, suggesting that some sort of a story or message is contained in the group. A tracing of one such petroglyph frieze comprises Fig. 3. Just what message the early inhabitants of this desert region intended to record or convey, we do not know.

In the American southwest, most of these petroglyphs are on dark hard rocks, the symbols being marked by pounding away the hard black "desert varnish",

exposing the lighter unaltered rock below. Age of some of the petroglyphs is indicated by a regrowth of the "desert varnish" after they were made. At some sites, the first petroglyphs have been almost obliterated by subsequent weathering, and several sets of symbols, of various ages, have been pecked into the same rock surfaces.

Recent observations by Heizer and Baumhoff, in western Nevada, show that most petroglyphs occur along deer migration trails, and these two field workers conclude that the petroglyphs had something to do with hunting magic (1). In the Arizona—Sonora area, similar petroglyphs are found, but these are usually located along trails between water holes. As these same trails are also used by migrating game animals, the two observations may be in some agreement.

Opinions as to the meaning, if any,



Fig. 2. Photomontage of geometric petroglyph patterns collected by Pedro Bravo at a site 13 miles southwest of Caborca, Sonora. At this site, which was first reported in 1909 by Carl Lumholtz and Alberto Celaya, there are several hundred individual patterns.

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of these rock carvings are many and varied. Some of them, pretty surely, are ancestral to our modern "telephone booth" doodles, having no real meaning except perhaps to a psychiatrist. Some others, undoubtedly, are aboriginal equivalents of the present-day "Kilroy was here". Others, without doubt, convey messages such as "Fights-With-His-Wife killed two mountain sheep here during the summer without rain, saving his clan from starvation", or "Here Three-Chins ate too much pitahaya and was sick for five days". Most of the others, at present, we can neither interpret nor explain.

Because the same symbols occur in petroglyphs over a very wide area—roughly from the Colorado Plains to the Pacific Coast; and from northern Washington to central Sinaloa—it seems highly probable that they are some sort of written language, and not either individual shorthand or "just doodles".

Needed, for solution of this interesting problem in archaeology and prehistory, is a great mass of accurate information about petroglyphs. We need to know not only what symbols are used, but exactly where the petroglyphs are, the types of rock into which they are carved, what their environment is, and an indication of their probable age. With

very complete information, a lot of hard work, and perhaps some good luck, we may some day be able to solve the riddle of these ancient and widely-distributed rock carvings.

In every western state, universities and museums have archaeologists who are interested in petroglyphs. Reports from field workers, particularly those trained in geology and mineralogy, are most welcome. If, while hunting for geodes in some isolated desert valley, you come across a cliff decorated with petroglyphs, a complete report of your find, preferably illustrated with good clear photographs, will be welcomed by the nearest museum or state university. Perhaps your report will furnish the "Rosetta Stone" needed to interpret these aboriginal rock writings.

ACKNOWLEDGMENTS

The writer is indebted to Dr. Elizabeth Morris, of the University of Arizona, for helpful discussions of field problems relative to southwestern petroglyphs; and to Mr. Pedro Bravo, of Ajo, Arizona, for access to his extensive file of field information.

REFERENCE

- (1) Heizer, Robert F., and Baumhoff, Martin A., "Great Basin Petroglyphs and Prehistoric Game Trails", *Science*, Vol. 129, No. 3353, April 3, 1959, 904-905.

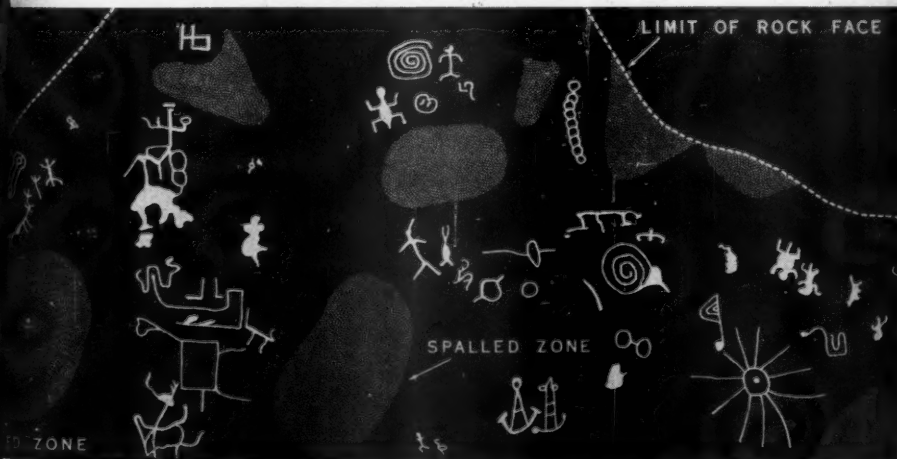


Fig. 3. Tracing of a petroglyph frieze from the Altar Valley of Sonora.

Recent Fossil Collecting in Western Pennsylvania

By DAVID M. SEAMAN

American Museum of Natural History
New York, N. Y.

Early in November 1959, just before and after the Geological Society of America Convention in Pittsburgh, I had the opportunity to collect many interesting invertebrate fossils from a number of Pennsylvanian and from one Mississippian period fossil locality in the vicinity of Pittsburgh, Pa. Formerly when I was with the Carnegie Museum from 1939 through 1949, I had collected from over thirty-five different fossil localities in the Pittsburgh area. Now the opportunity was at hand to renew collecting and to observe what changes if any had taken place at some of the old localities where I had previously found excellent invertebrate fossils.

The first locality visited was near Shelocta, Indiana county, Pennsylvania just off of route U.S. 422 about a quarter of a mile north of Shelocta and towards Kittaning. A notice of this locality appeared in the November-December issue of 1959 in *Rocks and Minerals* in the Fossil Department as a note from Mr. Ronald N. Cibic, 427 - 3rd Street, Leechburg, Pennsylvania.

I had first collected there on August 10, 1946 with Howard Hamilton, then of Vandergrift, Pa., but now living in Salt Lake City, Utah. At that time this road cut was along the main U.S. route 422 but this cut is now along a side road used as an access road into several farms and other side roads. This fine exposure is about a hundred yards in length. No one will bother you as the road along this cut is only infrequently used, so you can collect without any interruption as long as you wish.

The fossil bearing limestone exposed is the black, nodular limestone about a foot in thickness known as the Brush Creek limestone of the Conemaugh, Pennsylvanian period. The fossils are best collected from the black, carbonaceous shales immediately overlying this limestone. It is necessary to climb up the bank of the road cut to get to this horizon, sometimes as much as twenty feet

above the road. While you are climbing up you will notice a thin layer of coal about six inches in thickness a few feet below the Brush Creek limestone. A few specimens of it may be of interest also. In the black shales about a foot above the Brush Creek limestone is a layer of many clay-ironstone (siderite) concretions. In breaking them open some interesting minerals are revealed along shrinkage cracks near their centers. Howard Hamilton found some tiny, dark brown, hexagonal, hemimorphic crystals to a millimeter in width and three millimeters in length embedded in white platy barite in one of these concretions on our first trip there. These proved to be two new polymorphous forms of wurtzite, wurtzite 4H and Wurtzite 6H which were described by Dr. Charles Palache and Dr. Clifford Frondel of Harvard University in 1950. Other associated minerals in the concretions are small amounts of pyrite, chalcopyrite, sphalerite, and calcite.

Gastropods are the most common fossils at this locality, crinoid columns are fairly common, and occasionally a straight and a coiled form of cephalopod are found. The common gastropods are the pagoda-like, medium spired, *Worthenia tabulara* (Conrad); the smooth surfaced, *Strobus primogenius* (Conrad); and the ribbed shell of *Shansiella carbonaria* (Norwood & Pratten). A small, very high spired, smooth surfaced gastropod, *Soleniscus typicus* (Meek and Worthen), is the most common fossil found in this cliff exposure. The small cup coral, *Lophophyllidium proliferum* (McChesney) is also commonly found here. The straight cephalopod, *Pseudorthoceras knoxense* (McChesney) and the small, coiled *Metaceras perelegans* (Girty) are occasionally found.

The second locality visited was the Baltimore and Ohio Railroad cut at Wittmer about two miles north of Etna, a suburb of Pittsburgh. This cut is along route 8 just opposite the Ball Chemical

factory. However fossil collecting wasn't very good there as in the ten years since I had been there. Much slumping of the shales over the limestones in this cut had made it a very dangerous area in which to collect fossils. Both the Brush Creek limestone along the lower bench and the Cambridge (Pine Creek) limestone some ninety feet above it are exposed in the cut. Along the lower bench about a foot above the Brush Creek limestone, clay-ironstone concretions yielded another new wurtzite polymorph, wurtzite 15R, to the writer in 1946 as well as the other two polymorphs of wurtzite previously mentioned. Wurtzite polymorphs have also been found in clay-ironstone concretions above the Cambridge limestone in this railroad cut, the only locality found other than at the Brush Creek limestone horizon.

An excellent brachiopod, perfectly preserved of *Composita subtilita* (Hall) was removed from a block of Brush Creek limestone which had fallen down along side of the railroad tracks. A few of the common cup corals were found as well as the characteristic gastropod of the Brush Creek limestone, *Worthenia tabulata*.

Two shale quarries near Tarentum, Pennsylvania located along the Allegheny river, were next visited. They are about a half-mile apart and two miles west of Tarentum just off of route 28. There have been some great changes in them in ten years also. At the present time the one near Creighton, of the Allegheny Brick Company (old McFettridge Quarries), is working in shales above the Brush Creek limestone horizon so it is necessary to find, old, weathered blocks of this limestone from former operations in order to collect any fossils.

However the quarry at Glassmere, that of the Glassmere Brick Company (old Harvey Quarry) is still working at this horizon. Many blocks of the Brush Creek limestone are available from which to collect fossils, along the floor of this quarry. I found many excellent fossils in the shaly parts of this nodular, black, carbonaceous, limestone.

Brachiopods are much more common here and those found were the large productids, *Linoproductus platyumbonus* (Dunbar and Condra) and *Linoproductus prattenianus* (Norwood & Pratten). *Juresania nebrascensis* (Owen) and *Composita subtilita* (Hall) are also common. Occasionally a specimen of the wing-like appearing spirifer, *Neospirifer dunbari* (King) is found but in general they are quite rare.

Gastropods are numerous and well preserved here. Among the common ones found are *Worthenia tabulata*, *Strobus primogenius*, and *Shansiella carbonaria*. *Euphemites vittatus* (McChesney) and *Pharkidonatus percarinatus* (Conrad) are fairly common and *Glabrocingulum grayvillense* (Norwood & Pratten) and *Trepostira depressa* (Cox) occasionally found.

Pseudorthoceras knoxense, the straight cephalopod, and *Metacoceras cornutum* (Girty) a large coiled form and the smaller *Metacoceras perelegans* (Girty) are common. *Pennoceras seamani*, a small goniatite cephalopod, is quite rare. It is about an inch in maximum diameter. It was named by A. K. Miller and A. G. Unklesbay in their paper on Conemaugh, Pennsylvanian cephalopods in 1942.

The last two localities visited for Brush Creek limestone fossils are located near Sewickley, Pennsylvania. There is a long cliff exposure about a half-mile or more in length exposed at the west end of the Sewickley Bridge and extending in a northerly direction along the road. Here the common gastropods are found but they are much more robust. *Shansiella carbonaria* is larger and much more common here than *Worthenia tabulata*. *Metacoceras cornutum* (Girty) is a fairly common cephalopod at this locality and again of much larger size than near Tarentum, Pennsylvania. The common cup coral *Lophophyllidium proliferum* is common but brachiopods are seldom found here.

Keeping to the right and over the hill for about a mile from this locality, or some two miles from the west end of the Sewickley Bridge, there is a fine exposure of the Brush Creek limestone and underlying Brush Creek Coal at

the junction of this road and Flaugherty Run. Numerous fossils were found in blocks which had fallen down from the exposure high in the cliff and are now lying along a low bench some three feet above the road. A fine fossil fern imprint of a *Pecopteris* leaf preserved in the center of a pyrite concretion was found near the coal horizon at this locality. Over one hundred different species of invertebrates have been found at the Brush Creek limestone in western Pennsylvania. It was real fun collecting these two hundred and fifty million year old fossils again.

The last locality visited during my stay in Pittsburgh was for Greenbrier limestone fossils of the Mississippian geological period. An old, long abandoned quarry (the J.V. Thompson Quarry) is located along U.S. route 40 about a half mile east of the Summit Hotel on top of Chestnut Ridge about eight miles east of Uniontown, Pennsylvania.

This quarry exposes about eighty to ninety feet of the Greenbrier limestone and associated shales over a distance of a hundred yards or more. Much of this limestone is gray and massive and just loaded with fossil brachiopods, particularly of *Linoproductus parvus* (Hall) and *Linoproductus elegans* (Norwood & Pratten). *Spirifer pellaensis* (Weller) and *Composita subquadrata* (Hall) are quite common in the shaly portions of this limestone. Many of the spirifers are veritable fossil geodes and are found to be hollow with tiny dogtooth calcite crystals facing inward from the outside edges of the fossils even though the spirifers are only about an inch in size. *Martinia contracta* (Meek and Worthen) and *Martinia sulcata* (Weller) are also commonly found in excellent specimens in this limestone.

In the tan colored shales exposed above the limestone at the top of the quarry the small brachiopods, *Reticularia cooperensis* (Swallow), is quite common and two small pentrimites may be found with diligent collecting. *Pentrimites pateri* (Ulrich), and *Pentrimites pyriformis* (Say). Large flat brachiopods of *Orthotetes kaskaskiensis* (McChesney) are also

found in greater numbers at the top of the thick limestone layer.

A few pelecypods are fairly common as *Pinna maxvillensis* (Whitfield), *Schizodus chesterensis* (Meek and Worthen), and *Allorisma andrewsi* (Whitfield). These as well as gastropods are very poorly preserved in this limestone.

Triplophyllum spinulosum (E. & H) is the only common cup coral found. *Kaskaskia wilsoni* (Walter), a small trilobite about an inch and a half in length, is occasionally found along the inclined shale slope forming the base of the quarry. Three large coiled cephalopods, the only ones known from the Greenbrier limestone, were found by myself at this quarry and one at the quarry on the west side of Chestnut Ridge by Leigh Collins of Wilkinsburg, Pennsylvania (deceased). They are known as *Endolobus greenbrierensis* (Miller and Collins) and were described by A. K. Miller and Leigh R. Collins in 1947.

In all some fifty different species of invertebrate fossils have been found in the Greenbrier limestone on Chestnut Ridge. Over half of these are of brachiopods. A few different species of shark teeth have been found, and one shark spine at the quarry on the west side of Chestnut Ridge.

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FLUORESCING PEGMATITE IN MAINE

BY STEARNS J. BRYANT

Winthrop Mineral Shop
Winthrop, Maine

The first of July, 1959, my wife, Priscilla, and I went in partnership with Charlie Bragg of Buckfield, Me., and leased an old mine in Oxford County, Maine. Many years ago this mine had yielded tourmalines of many colors in numerous pockets. We had high hopes that by spending a few hundred dollars we might have the luck to open another pocket. This mine is located in Hebron, Maine, and is known as Mt. Rubellite.

When we entered the mine it was a "mess". Trees thirty feet tall had grown from the floor, rocks from the last blast many years ago blocked the entrance and littered the floor. The old road had become nearly blocked by trees except for a footpath worn by numerous rockhounds.

After a day's work with the chain saw and ax, we were able to drive to it in our jeep and after a day of bulldozing we drove the compressor to the top of the ledge and started drilling. As the "pocket" area was covered by about twelve feet of cap rock, Charlie was very generous with the dynamite and this rock is now well distributed throughout the nearby woods.

This rock is ordinary looking pegmatite—feldspar mixed with quartz, black tourmaline, mica and an occasional beryl.

After about the fifth blast, Charlie, very excitedly announced he thought he had struck a pocket and sure enough, there was a pocket about the size of a peck basket. You can imagine our disappointment to find only quartz crystals and of not too good a quality at that.

We carried these crystals home to place in our shop to sell. We washed them and put about a dozen on the display shelf, the remainder went into a box under a table.

Two weeks went by and only a few crystals had been sold when a black light kit we had ordered arrived. I had it assembled by 11:30 that evening and Mrs. Bryant and myself were trying it

on our Franklin, N. J., minerals when suddenly I noticed a vivid green fluorescence from under the table. We turned on the white light and sure enough, it was the quartz crystals yet there was no sign of a coating of another mineral on the quartz.

The next day I purchased an electric shaver converter to plug into the cigarette lighter of the jeep to power the black light and that evening Priscilla, Charlie, and I returned to the mine to see if we could find any more material which would fluoresce. It was nearly dark by the time we arrived so I hooked up our black light and turned it on. This was when we received the greatest surprise and thrill of our life—*everything* around us broke out in multi-colored fluorescence—quartz, feldspar, mica, chips at our feet, boulders on the dump and in the workings, even the face of the ledge was fluorescing green, blue, white, pink, yellow and orange.

Immediately we discovered another amazing fact. We could not tell which rock would fluoresce a certain color. One piece of feldspar would fluoresce green, another which looked the same would be blue, another spotted with orange, another might be pink.

We had become so interested in looking around we had forgotten about the time so, to rest our eyes, I shut off our black light. Only then did we realize it was pitch dark. We had climbed over the dump and boulders with only the fluorescence of the rocks lighting our way yet we had been able to see perfectly where we were walking.

As it was 2:00 a. m., we loaded the jeep and returned home. We visited the mine every night for the next three weeks and continued to discover more interesting facts.

Mr. Robert Doyle, the newly appointed geologist for the State of Maine, accompanied us on one of these visits. He was visibly impressed and made this statement:



Mr. & Mrs. Stearns J. Bryant with some of the fluorescent pegmatite.

"The fluorescent pegmatite at the Rubellite Mine has been examined by the State Geologist and it appears to him that the fluorescence results from some as yet unknown trace elements which have washed over and also been injected into both the quartz and feldspars of the pegmatite mass. The golden fluorescence is probably mangana-apatite; and the green fluorescence is probably hyalite, although this latter identification is still tentative. The blue, yellow and rose-purple fluorescence is to date an unknown quantity. Results of a spectrograph analysis did not show any of the trace minerals; this negative result due probably to the very low percentage of the trace minerals. No radioactivity was reported, even under examination with very sensitive detection

equipment. This result rules out the possibility of the fluorescence coming from any radioactive mineralization.

"The color and extent of fluorescence is the most interesting characteristic of the deposit. The colors are varied and intense, in some cases being as strong as some of the Franklin, New Jersey fluorescences. Although fluorescent minerals have been reported in pegmatites from time to time during the past twenty years, this present deposit appears to have a more brilliant and varied assemblage than any other in the state. It has added much to the increasing interest in Maine gemstones and collecting minerals which have long been known from Maine."

The specimens have been examined by many collectors and to this date no one

has been able to explain the fluorescence.

Spectroscopic tests have given no clue as to the reason as each type tested the same and similar appearing non-fluorescence rocks test the same. Tests have also failed to show any trace of radio active content.

Short waves produce the greater part of the fluorescence although a few specimens are brighter under long waves. The green under short wave will occasionally respond to a lesser amount with long waves. We have found many which change to blue fluorescence and others which fail to respond with the long

waves.

One specimen from the pocket appears to consist of several small quartz crystals in green cookeite. It is very unusual in its fluorescence. When kept in an open room it will appear to be wet and will not fluoresce but when placed on tissue paper the paper will become wet and the specimen will become dry and have a beautiful brick red fluorescence but when placed in the open it will lose its fluorescence and again become wet.

For the present we shall call these specimens, Fluorescent Pegmatites. What else can we call them?

PETRIFIED WOOD ON BELLYACHE CREEK

By FRANK L. SIMS

750 "B" Avenue, West Columbia, S. C.

My wife (Margaret) and I got up early Saturday, July 4, 1959. We had heard that petrified wood could be found in Bellyache Creek near Darlington, S. C., Darlington County. My friend, Mr. Hunt, had told me if I would come over he thought he could show me a log of it resting on the bottom of Bellyache Creek. They say the Indians named it from a superstition that if you drink from its waters, it will cause you to have the stomach ache. Could be. Mineral springs are located on it and its waters flow over a marl formation.

We packed the 20 feet of 1 inch manila rope, a heavy truck tow chain with hooks on both ends and a 1½ ton ratchet type hoist and headed for Darlington, S. C. (home of the Southern 500) about 75 miles from home, West Columbia, S. C. We arrived there about 9:30 A.M. The log was on the bottom alright, under about 2 feet of fast water. Only one end was out in the creek, the balance was under the bank about 4 feet deep in heavy marl and dirt, with large tree roots all around it. We tied the rope, double strand, around a large tree, rigged the hoist and put on the pressure. We jacked until the rope

started parting (new so help me). We moved the log about 6 inches and it jammed against some large roots that we were not equipped to remove. Well, I do not give up completely without some extra effort, so I started feeling around on the bottom of the creek with my bare toes. Pretty soon, I found a few small pieces in the sand. I did not have much luck, so Mr. Hunt came up with a very good idea. He offered me the use of a pitch fork. Rock grabbers, this is the trick. Jab the fork in the sand or dirt. When it contacts rock, you can easily feel the difference between rock and wood (real wood that is). In this way, I found about 150 lbs. of pretty good petrified wood.

If you have never had any red bugs (chiggers), you have never enjoyed scratching.

What are chiggers? That is a hard one to answer if you have never seen one. They are almost microscopic in size, about the size of a tiny "dot", and red. They are from the mite family and listed in the World Book and Encyclopedia as jigger or chigger, native of the middle west and south. His scientific name is Trambicula Alfreddugesi (irritans).

"HOUSING YOUR MICROMOUNT COLLECTION"

By N. B. HOPKINS, JR.

3814 Euclid Avenue, Lawton, Okla.

Here is a novel and efficient method of organizing and housing your micromount collection no matter how large it is or how complex your subject classification may become. Many m/m collectors and thumbnail collectors elected miniturization by reason of lack of space, frequent moves or economic reasons; however, it is a fact that few collections are organized to overcome these drawbacks. There are usually no suitable cabinets available which are of the exact dimensions you need, and those which are suitable are expensive, not portable and inefficient for your purposes. The only recourse is to build your own drawer cabinet. Then you may as well take up carpentry for your hobby for building a cabinet is quite a project. It is noteworthy that few drawer cabinets provide for efficient packing for movement and protection of your specimens against shocks and vibration. Your collection is never constant; thus its organization must be flexible, allowing for growth and the regrouping of your classification from time to time. These problems can be solved with a little ingenuity and a very small investment in the following manner:

Photo # 1

Ready-made trays are available in the form of cheap aluminum bake-pans at your nearest hardware, supermarket or department store. Determine which are the most suitable, the number of specimens you desire to place in a tray, the size of your boxes and the number of trays you will need. Pick trays with enough depth to allow for efficient nesting *AFTER* your specimens are inside them, since a shallow tray or one with too much taper of the sides will be unsatisfactory. Then purchase some black velveteen or soft felt material. This material must have sufficient nap to cushion your specimen boxes against vibration and also position them securely when nested. Then with a tube of trim adhesive and a pair of scissors, you are ready to begin.

Photo # 2

After cutting the material to fit the bottom of the aluminum tray snugly, cement two cut pieces of material to each tray, one on the inside bottom and one on the outside bottom, nap out. This enables your trays to nest one upon another, and the material will sandwich your speci-



Photo 1



Photo 2

mens to prevent them from being scratched or thrown about during movement. Allow plenty of time for the adhesive to dry thoroughly. Clean any excess away and check to see that the cloth is securely and completely attached.

Photo # 3

After preparing your trays, you may begin to assemble your collection. It has been found that small self-sticking labels when placed on the visible side portion of

the tray were very satisfactory for identification. When you desire to pack your collection for moving, or just to carry some of it over to a friend's home for an evening of entertainment, simply select those trays you need, nest them and secure them with string or rubber bands. An extra empty tray is handy to place over the top tray specimens, keeping them in place, as well as providing a place for your tweezers, magnifying glass, note pad and duplicates for trading.



Photo 3



Photo 4

Photo # 4

When you want to display or examine your collection, arrange your trays in any manner you choose. All your specimens are ready for inspection at all times, right in their trays, and you will find it easy to keep them organized. As your collection grows, add more trays as you need them. You are now in business!

(Comment by Neal Yedlin. An ingen-

ious and novel method of storage. And a cabinet frame can be built so that the lips of the pans rest and slide on flanges in the cabinet, to act as drawers. The photographs show the pans to be full. What happens when an addition is necessary—when you've just obtained another pyromorphite from a hitherto unknown locality, say Unionville, Conn.? We suggest that about 25% of the space in each pan be filled with blanks.)

HEY!

Want to visit some rockhounds at their homes on the way to or from the Eastern Federation Show in Asheville, N. C., August 4, 5, 6, 1960?

Just drop a postcard to Box 1617, Asheville, N. C., requesting a list of members of the host club, Southern Appalachian Mineral Society. You'll find some on your way whether you come from California, Canada, Canal Zone or Texas.

Three Speakers Engaged

Three outstanding speakers already have accepted invitations to speak before the Eastern Federation meeting in Asheville, N. C., August 4, 5, 6, 1960.

They are Dr. Vernon J. Hurst, Georgia State Geologist; Prof. John Hanahan, Belmont Abbey College, and E. T. Ridgeway, Columbia, S. C. Prof. Hanahan will speak on cleaning and preparing specimens for display and Mr. Ridgeway will give an illustrated lecture on faceting.

9 year old Miss interested in rocks!

Editor R&M:

I am nine years old and I am a student at St. Anthony's School and I am in the 4th grade.

I started collecting rocks and minerals six months ago—I have some rocks from Arizona, California, and Kentucky.

I shall be happy to correspond with some one who has the interest in rocks.

Carolyn Payne
1660 Michigan Ave., N. E.
Washington 17, D. C.

12 year old girl wants to trade rocks!

Editor R&M:

I would like to hear from boys and girls around 12 years old in the United States or foreign countries who would like to trade rocks and minerals.

I would like to hear from girls who live in or around Beverly Hills and Benedict Canyon who would like to start a club.

Miss Victoria Thenhaus
1156 Eventide Place
Beverly Hills, Calif.

THE GEOLOGY OF BARRY ISLAND, SOUTH EAST GLAMORGAN, WALES

By ALAN MORGAN

30 Porthkerry Rd., Barry, Glam., So. Wales

The town of Barry and its island lies on the south eastern coast of Wales in the county of Glamorgan. In order to find this locality on a map of Great Britain locate the capital city London which lies on the $51^{\circ} 30'$ latitude. Follow this line along for one hundred and fifty miles due West to Cardiff, the capital of Wales. Barry lies ten miles to the south-west of this capital.

The rocks of the area vary in age from the lower Carboniferous limestone (Mississippian) to the Lower Lias of the Mesozoic. Mineral concentrations are absent, but on certain sections of the coast fossils are plentiful.

The first photograph shows Barry Island from the west looking eastwards. Barry Island was originally an island, but during the construction of the Docks in 1888 it was joined to the mainland

on its northern side. The name "Island" is still used but it is geographically incorrect. In the extreme right foreground is an excellent example of a storm beach, known as the "Pebble Beach.....". The long shore drifting of the pebbles from west to east is stopped by Cold Knap Point, the promontory in the right foreground.

The photograph shows three isolated inliers of Carboniferous limestones. From right to left these are, Cold Knap, Friars, and Nells points. The large bay in the foreground is Watchtower Bay; the second smaller one is Whitmoor Bay.

The rocks of the three Carboniferous inliers are grey, massive mountain limestones which are well bedded and jointed. The inliers form part of the southern limb of a denuded anticline with a synclinal axis off-shore. Friars point the central inlier, is the best locality for



Photograph 1—Barry Island, Wales

Carboniferous fossils, and *Phillipsia* among the last of the Carboniferous trilobites, has been found on the south western side. Brachiopods, Bryozoa, Crinoids, Corals and Gastropods are common, whilst Echinoids, Cephalopods, and the teeth of Carboniferous sharks, *Psammodus*, are rarer. Few minerals occur but *Galena* is present in small veins in the south of Friars point. *Calcite* and *Aragonite* are common and occasional traces of *Chert* may be found in the northern half of the inliers.

Subsequent deposition on the tilted Carboniferous series resulted in a marked unconformity with the younger Keuper breccias of Triassic age. Photograph 2 shows the unconformable junction of two major geological series, the lower dipping rocks of the upper Palaeozoic and the horizontal series of the lower Mesozoic.

The Keuper breccias were deposited under arid terrestrial desert conditions, and fossils have not been found in it. Minerals are rare but include *Barytes* (Heavy spar) in a pinkish-white compact

mass, with small flecks of *Copper pyrites* included in it.

Red marls follow conformably with "Tea-Green" marls above them. At both horizons fossils are rare though a few plant remains do occur in the upper beds of the green marls. This is a reflection on the return of the humid climatic conditions resulting in the difference in colour between the red and green marls, which preceeded the return of the Rhaetic sea. *Baryte* is once again the most common mineral occurring in geodes of pale blue crystals. More compact masses of red and blue barytes may be found but good crystals are destroyed by intergrowth. The best locality for baryte specimens is in Jacksons bay on the west side of the beach, and near the railway tunnel. The baryte occurs in a nodular band 10 feet above the junction of the red and green marls.

The return of the sea in Rhaetic times heralded the approach of the second part of the Mesozoic; the Jurassic period. This follows conformably above the green marls and may be likened to the sea



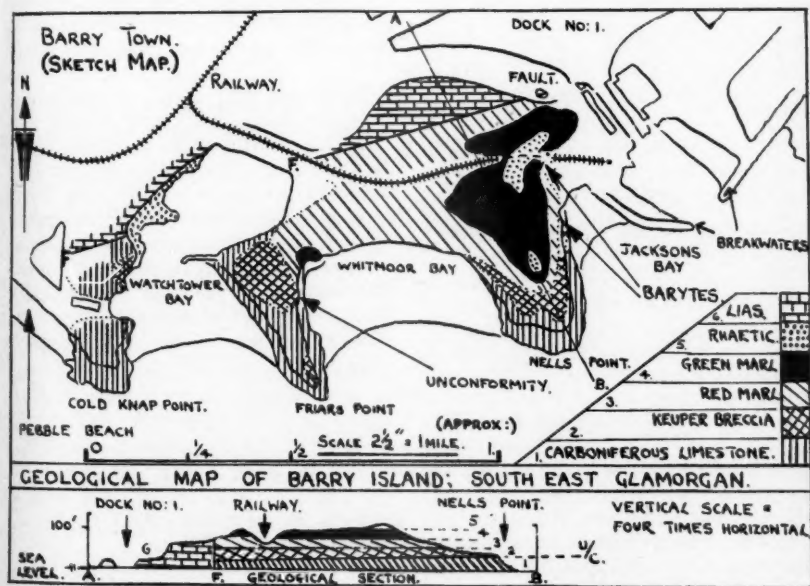
Photograph 2 — Unconformable junction of two major geological series on Barry Island, Wales.

invading the Salten area of southern Arizona. Fishes that were swept in by the sea could not live in the more stagnant waters of the small lakes in the area and died giving characteristic bone beds in several places.

The Rhaetic system at Barry Island may be divided into two parts, the black *Pteria contorta* shales with the main bone bed at its base, and the upper White Lias limestone with two smaller bone beds. The former series is unfortunately obscured by housing estates, but the latter limestone group has been thrown by faulting almost down to sea level in Watchtower Bay. The White Lias is an almost horizontal well bedded limestone. Two small bone beds have been located yielding excellent remains of sea urchin spines, *Cidaris*, and more isolated Ichthyosaurian vertebrates. Large expanses

of ripple marks and sun cracks may be seen, and numerous *Ostrea*, a common irregular lamellibranch occur on many bedding planes.

Finally the last deposit, the Lower Lias rests conformably on the White Lias. The fossils are mainly lamellibranchs such as *Gryphaea* which are extremely common on the Pebble beach together with *Plagiostoma* and *Lima* and small gastropods such as *Pleurotomaria*. Ammonites are fairly common in some shale bands interbedded with the limestone, but they are poorly defined and almost completely destroyed by compression. Corals and Brachiopods are rare at Barry but extremely common a few miles to the west. Minerals are relatively few and far between, *Calcite* being the most common type with occasional patches of *Iron pyrites* in the shales.



Geological map of Barry Island, Wales



WORLD NEWS ON Mineral Occurrences

ITEMS ON NEW FINDS ARE DESIRED
PLEASE SEND THEM IN.

Abbreviations: xl—crystal
fl—fluoresces

xled—crystallized
ph—phosphoresces

xline—crystalline

ALABAMA—In the early days of gold mining in Alabama in the Cragford district of Clay County, the workings which entered the unoxidized zone encountered considerable arsenopyrite which was of silvery-white color and occurred in layers from 1 to 4 inches thick.

ALASKA—From Flat Creek, Alaska, we have some nice brown jasper pebbles that were sent in by Mary E. King, Star Rt., Palmer, Alaska.

ARIZONA—From a locality in Mohave County in N.W. Arizona, we have an interesting specimen that was sent us by John S. Albanese, P.O. Box 221, Union, N. J. The specimen is kaersutite (a lustrous black titaniferous amphibole) in dark gray camptonite.

"Kaersutite (titaniferous amphibole) in camptonite. Found 8 miles south of Hoover Dam on road to Kingman, Arizona."—on label.

Kaersutite received its name from Kaersut, Unmanaks fiord, North Greenland, where it was first found.

ARKANSAS—A deep red jasper pebble, $1\frac{1}{2} \times 2$ inches, in size, beautifully tumbled-polished, and coming from the world-famous Crater of Diamonds, near Murfreesboro, Pike Co., Ark., was presented the Editor of R&M, by the Millars, owners of Crater of Diamonds. The presentation was made on Fri. May 1, 1959, when the Editor made his first visit to the locality. This was only one of the many beautiful specimens in the big box-ful received from the Millars.

The Crater of Diamonds is the only genuine diamond crater in North America. It is a tourist attraction and opened year round, daily and Sunday.

CALIFORNIA—"I am sending you some xls which came from the same area as the glauberite xls mailed you last June from Imperial County near Bertam Siding on the Southern Pacific R.R., on the east side of the Salton Sea, about 20 miles north of Hiland, Calif. The area is entered by permission now.

"I thought this material was thenardite but it answers none of the simple tests I am able to give. Is not soluble in water as Dana says thenardite should be. It fluoresces orange under my long wave, negative under short wave. Resembles gypsum slightly except no gypsum in this part of the country is activated under UV lamps."—letter dated Oct. 5, 1959, from Ralph A. Clutter, 133 E. Penn. Ave, Escondido, Calif.

The xls are gypsum—rough, dark gray xls of selenite (gypsum) which vary from $\frac{3}{4} \times \frac{3}{4}$ to $\frac{1}{2} \times 2$ inches and all xls received fl. a bright orange-brown under both wave lengths, long and short. Because of the rough and slightly cellular surfaces, the identity of the xls was puzzling to Mr. Clutter.

COLORADO—"About 10 miles east of Castle Rock (Douglas Co.), Colo., I was searching for petrified wood (later I learned I didn't go far enough) when I stumbled upon a nice specimen of

chalcopyrite, galena, and iron pyrite. This specimen was found in a road cut. I searched the cut for about an hour for more of the material but all I found was a bit of petrified wood."—item recently received from T. Jones, 670 Estes, Denver 15, Colo.

CONNECTICUT—"Would you kindly advise me as to the name of the mineral that has been weathered away leaving brown rusty-like material in the cavity in the specimen enclosed?"

This material came from a pegmatite quarry in Woodbury (Litchfield Co.), Conn. There was a large boulder (2 tons) that was "shot" full of Columbite-tantalite crystals as well as many of these weathered out minerals."—item dated Feb. 4, 1960, from Mrs. Sterling Parker, RFD 1, Woodbury, Conn.

A large white mass of albite was received. The unknown mineral in the cavity is believed to have been black tourmaline, leaving remnants of dark brown limonite. It is an interesting specimen.

DELAWARE—Nice milky quartz pebbles have been found on Bowers Beach, Kent Co., Del., by Bob and Hazel Reynolds, Stocksdale Rd., Kingsville, Md.

FLORIDA—In following the dredge in Gulfport (suburb of St. Petersburg), Pinellas Co., Fla., some beautifully xled white selenite was found by Mrs. Ray F. Bowman, 1791 Sylvan Dr., Clearwater, Fla.

Gulfport is on the Gulf of Mexico.

GEORGIA—An interesting article, "Beryl in Georgia," by A. S. Furcron, appeared in Georgia Newsletter, Winter 1959, pp. 91-95 (Published by the Georgia Geological Survey, 19 Hunter St., Atlanta, Ga.—A. S. Furcron, Editor).

HAWAII—When the Alexander Dam was constructed in 1933 for the McBryde Sugar Co. on Kauai Island, Hawaii, white, amorphous allophane was found incrusting the basaltic rock excavated.

IDAHO—A grayish mass of sillimanite was sent in by Tupper Jones, (Jones Rock Supply), Elk River, Idaho.

"The sillimanite specimen was found in place on O'Donald Creek, about 40 miles in the back country from Elk River (Clearwater Co.), Idaho. There is nothing but virgin timber and mountains in that area and the rockhounds have hardly scratched the surface. None of us actually know what minerals are in that area."—note on label.

ILLINOIS—"From Pittsfield, Pike Co., Ill., I have a specimen of marcasite that was found on my uncle's farm by my cousin, David Chamberlin."—note sent in by Richard D. Armstrong, 1036 N. 33rd St., Decatur, Ill.

INDIANA—"Am mailing a specimen of strontianite from Rogers Quarry, Bloomington, Ind."—item dated Feb. 12, 1960, from Walter Reeves, R 3, Greencastle, Ind.

The specimen received consists of whitish, xled strontianite lining a large cavity in gray limestone.

"Strontianite xls from Rogers Quarry in northwest edge of Bloomington, Monroe Co., Indiana. I am not sure if this quarry is still in operation."—on label.

IOWA—"Been quite a while since I've sent in an item for Mineral Occurrences.

"Last fall on a trip to northeastern Iowa (Spillville and McGregor area), we were on Hiway 24 traveling east from New Hampton. Before reaching Ft. Atkinson, rock outcrops began to appear in the road cuts so pulled over to have a look but nothing of interest. However, over the fence was an outcrop of light gray shale. Thinking I might find some Ordovician age fossils in the shale, investigation was in order. Again the exposure proved barren of fossils but there were small, tabular shiny xls scattered here and there and pretty soon I found a cluster that hadn't disintegrated. My first thought was that they were selenite xls but the clusters seemed heavy so I'm

wondering if they are not barite xls instead. Sending you a couple of clusters for identification."—item dated Dec. 31, 1959, from Amel Priest, Peru, Iowa.

Your first thought was correct, Mr. Priest, as the specimens are selenites, groups of flat, platy, glassy, grayish xls. The locality is in S/W Winneshiek County of N/E Iowa.

KANSAS—"In the southeast corner of Kansas and extending over into Missouri and Oklahoma, we have the famous Tri-State lead and zinc mines.

"Some of these may allow visitors down in the mines. Notice the immense piles of chat which is the chert after extraction of the ores, you can find a few samples of the ore in these piles.

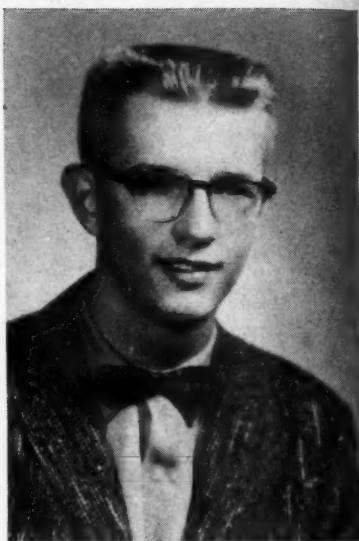
"Minerals found in these piles are galena and sphalerite. These often show dolomite and chalcopyrite incrustations. You may also find pyrite, marcasite, calamine, greenockite, cerussite, and a few other minerals.

"Just north of Galena, Kansas, along the highway, Boodle Lane has a mineral shop. There is a tripoli mill at Baxter Springs, Kans."—item dated Jan. 19, 1960 from Larry Davis, 617 East Ave. B, Hutchinson, Kans.

KENTUCKY—The following item, dated Feb. 16, 1960, was sent in by Malcolm Arnett, Corydon, Ky.

"It seems that it is not generally known that the Kentucky-Southern Illinois fluorspar district is a good place to collect fluorescent material. The white massive fluorite is most responsive. Under long wave ultra violet light it will fluoresce blue, white, and sometimes has traces of orange. It is usually a mixture of colors but I have found specimens of pure blue and pure white. I have not checked it with short wave U.V. light. I am planning to make an extensive study of this material next summer. I have specimens from different locations and (if white, massive) it all responds to U.V. light.

"I have 50 or 60 lbs. of this material on hand which I would trade for good mineral specimens."



Larry Davis
Hutchinson, Kans.

LOUISIANA—Brownish pebbles of jasper have been found in the terrain around Port Vincent, Livingston Parish, La.

MAINE—From Birch Pt., Perry (Washington Co.), Maine, we have an interesting specimen that was sent in by William P. Hinkley, RFD 3, South Brewer, Me. The specimen consists of tiny green epidote xls on massive green epidote which is associated with some massive milky quartz.

MARYLAND—Zelma Wright, 3105 Dundalk Ave., Baltimore 22, Md., sent in an interesting specimen consisting of pale smoky quartz xls.

"Quartz xls group. Found in road cut half mile east of Cherry Hill, Harford Co., Md."—on label.

MASSACHUSETTS—"I am sending you a specimen which I had thought to be either chromite or ilmenite, but testing proved negative. I have come to the conclusion that it is hematite but I would

like to be positive. Will you identify it, please? It was found in Harvard, Worcester Co., Mass."—note dated Dec. 3, 1959, from Fred J. Ciavola, Sterling St., R.F.D., Lancaster, Mass.

It is a pleasure to check it for you, Mr. Ciavola. It is hematite.

The specimen consists of black, platy, lustrous hematite in massive milky quartz.

MICHIGAN—"I am sending a specimen which I would like to have identified. It was found on the beach at Petoskey (Emmet Co.), Mich."—item dated Dec. 1, 1959, from James F. Meacham, 730 Ewing Ave., Lima, Ohio.

The specimen is an odd one—a yellowish limestone. It is the first yellowish limestone we've seen in years.

MINNESOTA—A hard and dense massive bluish hematite is the chief iron ore mined at Ely, Saint Louis Co., Minn.

MISSISSIPPI—"I am sending under separate cover some selenite in sheets, crystals, and 'sunbursts' for your World News section. I found these and many more at Marquette Cement Plant, Brandon, Rankin Co., Miss. Along with these I found sharks teeth, bones, and many shells, all fossilized, in the dump piles.

"I like R&M very much and I hope to have it with me for the rest of my life. It has helped me a lot in my collecting and identification."—a recent item from Russell Calhoun, 4333 Welota Dr., Jackson 9, Miss.

Very nice selenites, gray in color, were received. One was a single xl 2" long.

MISSOURI—"I wish to present to you 3 pieces of drusy quartz which are enclosed in this package. Perhaps they are nice enough for your private collection (the Editor's). They are typical of what may be found in Washington County, Missouri. I just recently collected them near the town of Potosi which is in the center of the barite mining area in that county.

"On the additional pages of this letter are some notes on mineral deposits in this area which you may want to use in future issues of R&M."—letter dated Jan. 22, 1960, from John A. Allen, 1256 McLaran Ave., St. Louis 15, Mo. (Member of St. Louis Mineral and Gem Society).

Three large and very lustrous specimens were received. They were nodular masses of pale smoky, drusy quartz—very attractive and a real addition to the Editor's private collection. Thank you Mr. Allen for this delightful gift and also for the mineral notes which came with them.

MONTANA—Hjalmer Johnson, prop. of the Lost Cabin Trading Post, Wibaux (Wibaux Co.), Mont., has supplied us with more items, as per his promise (see March-April 1960, R&M, p. 118). One specimen is a most attractive one consisting of massive dark brown limestone (one face polished), one surface encrusted by dark brown limonite, while two faces are coated with drusy, golden-yellow calcite.

"From S/W Wibaux County, Mont."—on label.

NEBRASKA—"While hunting rocks at a sand pit near Arnold, Custer Co., Nebr., I found a tiny piece of amazonstone. Later my daughter, Rosalie, age 9, found a fist-sized piece of amazonstone associated with white quartz. The remarkable fact about these finds is that the nearest occurrence *in situ* of this green microcline (amazonstone) is at Pikes Peak, Colo., over 500 miles away."—item dated Feb. 3, 1960, from Mrs. Robert Cook, Callaway, Nebr.

NEW YORK—"Enclosed is a chip from a boulder 12"x14" that weighs a little over 350 lbs. The surface is mostly smooth with a few small pockets and has a dark red streak about 1¼ inches wide running the length of it. Could you please identify?

"This boulder was dug up right here on our farm about 50 years ago, apparently by mistake. The story is that

a meteor tell in our back pasture at that time and digging for it they dug up this boulder thinking it was the meteor.

"Our farm is located 8 miles S.W. of the city of Auburn, N. Y., 5 miles south of the village of Cayuga, and 3½ miles N.E. of the village of Union Springs. We are about 1 mile from Cayuga Lake. We find Indian relics occasionally, also fossils."—item dated Dec. 16, 1959, from C. W. Downing, R.D. 2, Cayuga (Cayuga Co.), N. Y.

The 3x4 inch, heavy, dark gray metallic specimen is hematite, the chief ore of iron. It is a nice specimen.

NORTH CAROLINA—From the feldspar quarries at Spruce Pine, Mitchell Co., N. C., we have a most attractive specimen—a mass of glistening dark green actinolite xls associated with grayish talc. This beautiful specimen was sent in by Rudolph J. Bland, Jr., 3218 Rueger St., Richmond 21, Va.

NORTH DAKOTA—Florence Newsum, Hurdsville, N. D., sent in a specimen of dark brown gem quality chalcodony she had found on her farm. Hurdsville is in S.W. Wells County, which is in central North Dakota.

OHIO—"I am enclosing what appears to be a rather unusual fluorite specimen in the hope you can give me a positive identification. You will notice that the small brown fluorite cubes are completely enclosed within a clear, colorless material. These casings look to be geometrically perfect in thickness and shape. Perhaps they are a colorless fluorite, but inasmuch as celestite, calcite and barite are also found in this area, I wondered if the outside covers could possibly be one of these.

"This material was collected at a limestone quarry in Clay Center (Ottawa Co.), Ohio. We also found the small brown fluorite cubes without the clear covers. In fact, the enclosed specimen is one of the only three we found like this."—item dated Dec. 4, 1959, from Mrs. Raymond E. Douglas, Rt. 3, Box 1073, Battle Creek, Mich.

A specimen of gray limestone was received. On the limestone are perched 4 small fluorite xls (cubes). The fluorites are intensely interesting—each is a colorless fluorite with a phantom of brown fluorite.

A phantom is a crystal in which an earlier stage of crystallization is marked in some way in its interior, generally with a faint outline (brown in this instance) whose form is exactly similar to that of the crystal.

OKLAHOMA—"I read your column on World News on Mineral Occurrences with great interest. I am enclosing two small rock samples which were found on a hillside 2 or 3 miles northwest of Perry, Noble Co., Okla. The largest of these specimens was about 3 inches long and most of them were double, or two circles of radiating crystals cemented together. A few were single.

"Although these rocks are not showy, they have aroused my curiosity and I would appreciate it very much if you could tell me what they are. It has been guessed that they are aragonite because of the radiating structure, but their weight leads me to believe that they might be barite. Please solve the mystery for me."—letter dated Dec. 6, 1959, from Miss Lynn Hearn, 734 N.E. 12th, Oklahoma City, Okla.

The specimen are dark gray radially fibrous gypsum (selenite) nodules, coated by red clay. Very interesting nodules.

OREGON—"Obsidian from extreme northeast corner of Lake County, Ore. Here it is of the finest quality in black, and red, all shades of (some call it golden) silver sheen and double flow. In here too are mercury mines."—item sent in by Mrs. Inez O. Rogers, P.O. Box 184, Oakridge, Ore.

Two lustrous, glassy specimens from the locality were sent in by Mrs. Rogers. One is a deep black, the other black and red. Very nice gem material.

PENNSYLVANIA—"Here is a little item for World News. Beautiful masses of pink, lustrous, saddle-shaped dolomite

crystals in parallel intergrowths have been found in the limestone and dolomite quarry north of East Petersburg, Lancaster Co., Penna. These masses measure up to $4'' \times 7\frac{1}{2}'' \times 3''$ and more. The occurrence is limited, however, to a few veins.

"Quartz crystals (3 or 4 inches), small 'nailhead' calcite, purple fluorite, and large white cleavages of calcite have also been found at this locality (also pyrite cubes, very brittle, in one place).

"Note: A friend and I just finished collecting here as the big snow storm of Feb. 13-15 began."—item dated Feb. 15, 1960, from David F. Hess, Box 269, F&M College, Lancaster, Penn.

RHODE ISLAND—Wm. G. Garrett, C.P.O. Mess, U.S.S. Wasp (CVS-18), FPO, New York, N. Y., had occasion to do some collecting in Washington County, R. I., the stretch along the Atlantic Ocean between Jamestown Bridge and Narragansett. He collected many minerals, one of which was a nice, loose, 2 inch muscovite xl (dark silvery-white color).

SOUTH CAROLINA—"I am sending you today a piece of petrified wood. It is from a tree section, weighed about 50 lbs. Note almost perfect grain (hickory, I believe). It came from about 5 miles below Hartsville, Darlington Co., (Auburn Community), S. C. Reference Mr. J. M. Sims."—item dated Nov. 2, 1959, from Frank L. Sims, 750 "B" Ave., West Columbia, S. C.

A beautiful brown and white, $2\frac{1}{2} \times 3\frac{1}{2}$ inch sawed section, was received. It shows nice banding, and may possibly be a hickory as it does resemble it. A broken corner reveals $\frac{1}{2} \times \frac{3}{4}$ inch area coated with colorless drusy quartz.

SOUTH DAKOTA—Mrs. Ed Olson, Beresford, S. D., sent in some beautiful pale amber-colored selenites—one is a flat, platy xl 2 inches long, another is a bustling group of small platy xls (commonly called a desert rose).

TENNESSEE—"Several months ago my father, Eugene Vanderheyden, and myself made a trip to check out a report on a mineral locality at which several small, shiny-black crystals had been found.

"After climbing a steep mountain in a drenching rain which made the hike slippery and slow, we finally arrived at the place said to contain the strange rocks which were locally referred to as "Black Diamonds". Although we searched the weathered shale for over an hour, we found only a few very small crystals. These were all less than an eighth of an inch across but displayed a perfectly square crystallization. As a result of several tests, we finally determined the crystals to be very fine specimens of limonite pseudomorph after pyrite.

"A few weeks later our threesome discovered a new locality which contained goethite and limonite crystals ranging in size from very minute specimens to crystals over an inch across. This location, about three-quarters of a mile further down the mountain range, consists of partially weathered shale in which the crystals are fairly solidly embedded. They occur in veins in forms as single, double and clustered crystals. The single crystals are almost always equidimensional with a very shiny-metallic black surface. They are some of the most perfect specimens I have ever seen.

"The location is in the general vicinity of Walland, in Blount County Tennessee, in the Chilhowee Range.

"Under separate cover I am sending you a few specimens which I would like you to identify positively and observe. I would appreciate any comments you might care to make."

John Dyer Jr.
Fairview Hts., Rt. 9
Maryville, Tenn.

Note: The specimens received consisted of a group of sharp, lustrous dark brown crystals of limonite pseudomorph after pyrite. Also loose crystals. They are all very very nice crystals and we hope you collected a number for exchanging. (No goethite present in the lot sent us).

TEXAS—Nice xled, brassy-yellow pyrite occurs near Alvord, Wise Co., Texas, but in time it disintegrates and falls apart. One specimen we had stored away in a dry place and 10 years later when it was

uncovered for examination it was a pile of soft, crumbly material completely coated by its disintegrated product — tiny, slender, colorless needles of melanterite. Did we throw this material away? Oh, no. We put it all in a bottle and labeled it—melanterite altered from pyrite, original pyrite found near Alvord, Wise Co., Texas. The melanterite formed in Peekskill, Westchester Co., N. Y.

UTAH—"I read in the Nov.-Dec. 1959, R&M, pages 499 and 500, about Mrs. Keller's 'cone-in-cone' formation that she sent you. It was extremely interesting to me, as a year ago we found some of this near Escalante (Garfield Co.), Utah, while petrified wood hunting.

"I thought I had found a different fossil-bearing rock, when I got home I took samples of it over to Mrs. Ruth Kirkby, a paleontology expert in Riverside to find out what it was. She said right away it was 'cone-in-cone' and showed me Fenton's Rock Book picture of it, and write-up about it (p. 277, photo is plate 42). I had never seen any before. She also gave me a specimen from Illinois, if I remember right, which was a gray mud, softer material than the Utah sandstone that I had. Also the specimen she gave me had much longer, thinner cones, and weren't as pronounced in the matrix as the Utah ones.

"Mrs. Kirkby says this is not a fossil but a rare geological formation.

"I am sending you a sample of this. Thought you might be interested."—letter dated Dec. 10, 1959, from Mrs. Aileen McKinney, 1080 Rancho Ave., Colton, Calif.

Two specimens were received, each 2x2x2 inches in size, brownish in color, and both showing nicely the 'cone-in cone' structure. However, both 'cone-in-cone' structures are in limestone (not sandstone).

R&M has described cone-in-cone structures from Ohio, Pennsylvania, Texas and Utah. Has any other state something similar to offer?

VERMONT—A good friend of R&M is Miss Evelyn Waite, 242 Scarsdale Rd., Crestwood, Tuckahoe, N. Y. In summer Miss Waite teaches at a girls camp in Vermont (Holliday Hill Camp, Craftsbury Common, Vt.).

Last summer Miss Waite collected some specimens in Vermont, one of which had her puzzled. Here is a recent letter from her:

"The enclosed specimen was collected at the asbestos quarry at Eden Mills (Lamoille Co.), Vt. It contains a lot of green serpentine but the yellow has me puzzled as it doesn't fluoresce with a black light. Of course I thought of autunite at once, until I found it didn't fluoresce."

The yellow coating on the serpentine is uranophane which does not fluoresce, but at one end there is a little autunite which does fluoresce (a bright green).

VIRGINIA—from Baker Mountain, Prince Edward Co., Va., we have a beautiful specimen consisting of sheets of fine green fuchsite, greenish xls of kyanite, and small brassy-yellow xls of pyrite. Donated by Rudolph J. Bland, Jr., 3218 Rueger St., Richmond 21, Va. Mr. Bland has a number of good duplicates for sale. See his ad in the Classified Section of R&M, this issue.

WASHINGTON—Charles C. Smith, R3, Box 20, Newport, Wash., has sent in some loose, deep black smoky quartz xls—one was 1 1/4" long and very nice.

The xls were found near Newport, Pend Oreille Co., Wash.

WEST VIRGINIA—We need items on this state. Who will be the first to send one in?

WISCONSIN — "In the Wausau (Marathon Co.), area of Wisconsin, moonstone can be found on the banks of Wisconsin River. Also several of the rare radioactive minerals"—item sent in by Lyle De Rusha, RR 1, Chippewa Falls, Wisc.

WYOMING—Quartz xls have been found in the feldspar quarries south of Laramie (Albany Co.), Wyo.

ARUBA—This is a small Dutch Island in the West Indies (Netherlands Antilles). From Aruba we have an interesting specimen—brownish chalcedony on dark brown limonite—that was sent in by Bill Learned, Box 566, Lago Colony, Aruba, Netherlands Antilles.

Aruba is an important oil-refining center.

AUSTRALIA—Kelvin Green, YMCA, Pitt Street, Sydney, NSW, Australia, sent in a most interesting clipping from his local paper. Unfortunately neither the name of the paper nor its date appear, but the clipping reads as follows:

2800 MILLION-YEAR-OLD ROCKS TELL W.A.'s AGE

Rocks 2800 million years old found near Quairading have pin-pointed a huge area of Western Australia as one of the oldest known land masses in the world.

The find, which has excited geologists, was made by Western Australian scientist Dr. Allan F. Wilson.

The rocks were discovered on the surface a few days ago about 110 miles east of Perth.

Dr. Wilson is reader in petrology at the department of geology, University of Western Australia. He has been appointed professor of geology and mineralogy at the University of Queensland and will take up his appointment in the new year.

Age of the rock was determined by the university's Department of Physics by radio-active measurement.

The oldest known rock structure in the world is thought to be in Central Africa, where rocks 3200 million years old have been found.

Discovery of this rock at Quairading follows earlier discoveries at Cunderdin, 100 miles east of Perth, and Hines Hill, 180 miles east of Perth and southwest of Merredin, where rocks 2500 million years old have been found.

Dr. Wilson said yesterday the Quairading rock contained the very rare mineral sapphirine.

Sapphirine had been found once before in Australia at Dangin, a few miles southwest of Quairading.

It was known to exist in only eight or nine other parts of the world.

Sapphirine was a glittering, dark-blue mineral which occurred in brown mica-bearing rock.

It had no commercial value at the moment but was of great interest to scientists.

Before Life

Dr. Wilson said discovery of this extremely old rock mass was more confirmation of theories bearing on the formation of Australia.

It appeared, he said, that a huge part of Western Australia was laid down early in the world's formative period, long before there was life on earth.

Over millions of years water and wind action to the westward had built up the much younger eastern section of Australia.

AZORES—Through the courtesy and kind interest of Arthur C. Lee, Sr., Crompond Road, Yorktown Heights, N. Y., we are the happy possessors of three volcanic rocks from the Azores. The rocks had been collected by Lieut. Arthur C. Lee, Jr., stationed with the U.S. Army Corps of Engineers at Lajes, Terceira Island, Azores (U. S. Air Force base since June 1958).

Rock # 1 is a 2x3 light gray basalt.

Rock # 2 is a 2x2 black cellular basalt in some of the cavities are small, glassy greenish grains of olivine.

Rock # 3 is a 3x3 red volcanic cinder (rough frothy rock).

The Azores are a group of 9 volcanic islands in the Atlantic belonging to Portugal. Terceira is one of the islands (the third largest) and the above rocks were collected at Lajes. Lieut. Lee is now stationed at Fort Riley, Kansas.

CANADA—From an old pegmatite mine at Hybla, Ont., Canada, we have an intensely interesting specimen sent in by Alvin Snyder, P.O. Box 19, Oriskany, N. Y. The specimen consists of choco-

late-brown masses of ellsworthite, black allanite masses, small brownish cyrtolite xls, and small chocolate-brown sphene xls—all in salmon-calcite.

FORMOSA—Formosa or Taiwan is China's largest island, lying on the Tropic of Cancer off the east coast of China. The island is oblong in shape, like the leaf of a tree, having its longer diameter from N to S. It is roughly 244 miles long and 75 miles wide.

In the northern part of Formosa is Hokuto Hot Spring, long famous as a health resort. The water from the spring flows thru gravel and consolidated sand and both the gravel and sand become coated with a light buff to grayish crystalline crust which has been given the name hokutolite, after the locality. Hokutolite is radioactive. It is a mixture in varying proportions of lead and barium sulfates, but regarded as a lead-bearing barite. A 3x3 inch specimen of this interesting mineral coating consolidated quartz sand was sent us by R. W. S. Doo, 155 St. Johns Rd., Glebe, Sydney, N.S.W., Australia.

"Barite var. hokutolite. Hokuto Hot Spring, Hokuto, Taipeh District, Formosa."—on label.

MEXICO—At Taxco, Guerrero, Mexico (70 miles S. W. of Mexico City), silver veins have been worked in slate. From the San Augustin Silver Mine in Taxco we have an interesting specimen that was sent us by John S. Albanese, P. O. Box 221, Union, N. J. It is a dark gray xline argentine asso. with brownish sphalerite, brassy-yellow pyrite, and white xline calcite.

SCOTLAND—Off the west coast of Scotland is the Island of Mull, "a mass of hill", about 30 miles long and 20 miles wide. The island is very hilly and mountainous and along its southern border projects a long granitic promontory called the Ross of Mull.

From the Ross of Mull we have an attractive 3x3 inch specimen of red granite that was sent us by our good friend, Sandy Ramsay, 1015 Aikenhead Road, King's Park Glasgow S4, Scotland.

"This is the rock, ferried across from the neighboring Island of Mull, that comprises one of the major building stones used in constructing the Cathedral at Iona."—on label.

Iona is a barren island about 3 miles long and 1½ miles wide lying 1¼ miles west of the S. W. promontory Ross of Mull, from which it is separated by the shallow sound of Iona. Iona is studded with ancient ruins one of which is the above cathedral.

SPAIN—"There is an active lead mine in Papiol, Barcelona Province, Spain, in which nice specimens are found of arsenopyrite, azurite, calcite (red fluorescence), chalcopyrite, fluorite (octahedral xls), galena, malachite, pyrite, quartz, silver (native), and sphalerite."—item sent in by Juan Montal, Plaza Sgdro. Corazon 1, Vilafranca del Panades, Spain.

LONG MAY R&M CONTINUE!

Editor R&M;

I am enclosing three dollars (\$3.00) for my 1960 subscription to ROCKS AND MINERALS. It continues to fascinate me, as it must all its readers.

I hope that this will be a good year for you and your work. Our trips, though not too extensive have certainly been more interesting because of items in R&M. Long may it continue!

Mrs. Donald MacIntyre
R.D. 2 - Box 255,
Sharon Springs, N. Y.

TRADING POST

An accommodation for those who want to trade.

We are planning a new feature in R&M for the special benefit of collectors who wish to build up their collections through exchanges.

Your name, address, and two principal items you have for exchange will be listed. Rate \$2.00 a year (6 issues).

Interested parties who want their names listed should send remittance to R&M. If enough interest is shown, this feature will begin with the next issue. R&M will assume no obligation in connection to exchanges.

Just as we were going to press, one name was received. It is:

Donald Presher, Box 146, Montrose, N. Y. (Cymatolite, kyanite).

THE MICRO - MOUNTER

Conducted by Neal Yedlin—129 Englewood Drive, New Haven, Conn.

This is a departure from the normal column devoted to news and notes about micro-mount mineralogy. As a collector of minerals first, we deemed it highly important that mineral collections be preserved for posterity. A discussion with Paul E. Desautels, associate curator of gems and minerals at the Smithsonian in Washington, has precipitated the publishing of some data relating to this vital suggestion.

I GIVE, DEVISE AND BEQUEATH TO THE U. S. NATIONAL MUSEUM (OR THE INSTITUTION OF YOUR CHOICE) ALL OF MY COLLECTION OR COLLECTIONS OF MINERALS, GEMS, FOSSILS AND ARTIFACTS, IN WHATEVER FORM THEY MAY BE, MOUNTED OR UNMOUNTED, WHEREVER SITUATED, AND I DIRECT THAT SAID SPECIMENS BE UTILIZED IN ANY MANNER WHATSOEVER TO ENHANCE OR IMPROVE THE COLLECTIONS AT SAID INSTITUTION. I FURTHER DIRECT THAT ANY CATALOGS, INDEXES, OR LISTS ACCOMPANY SAID COLLECTIONS.

In the past 40 years of collecting minerals we have too often heard of the loss, thru neglect, ignorance, pilfering, or sheer inertia, of fine collections of minerals. Many aggregations, after the death of the owners, were stored in basements, attics, barns or outbuildings, and eventually were lost or destroyed. Others were left to the favorite school of the collector, and usually these, too, ended in the realm of the forgotten. An institution may have a department head interested in minerals. If so the display flourishes. But with his passing, and the substitution of someone whose interest is elsewhere, or, with a change in the educational policy, the collection declines as such, gathers dust, is pushed aside for its space, is haphazardly "high-graded", and so becomes lost.

It is true that most private collections have little to add to those housed in a major institution. This is not always the

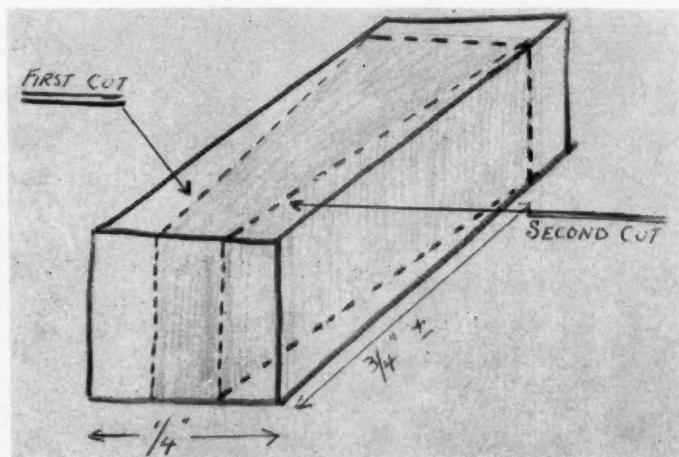


Fig. 1—Preparing pegs for mounting xls—1st 2 cuts.

case, however. Many old-time locality minerals are of intense interest and value. With new identification techniques available some of these are proving a rare source of new material, or of new information and data.

There is an added factor. A museum collection often may be enhanced by exchange. Private collectors, dealers, and others may have access to the new, un-

usual or rare. With a source of good trading material at hand the major institution may acquire worthwhile additions to its store of specimens without major expenditure of funds. And the dealer can then obtain good, less unique items, a supply of which is all important to his continued existence.

We suggest then, in drawing your will, after the necessary preliminary ver-

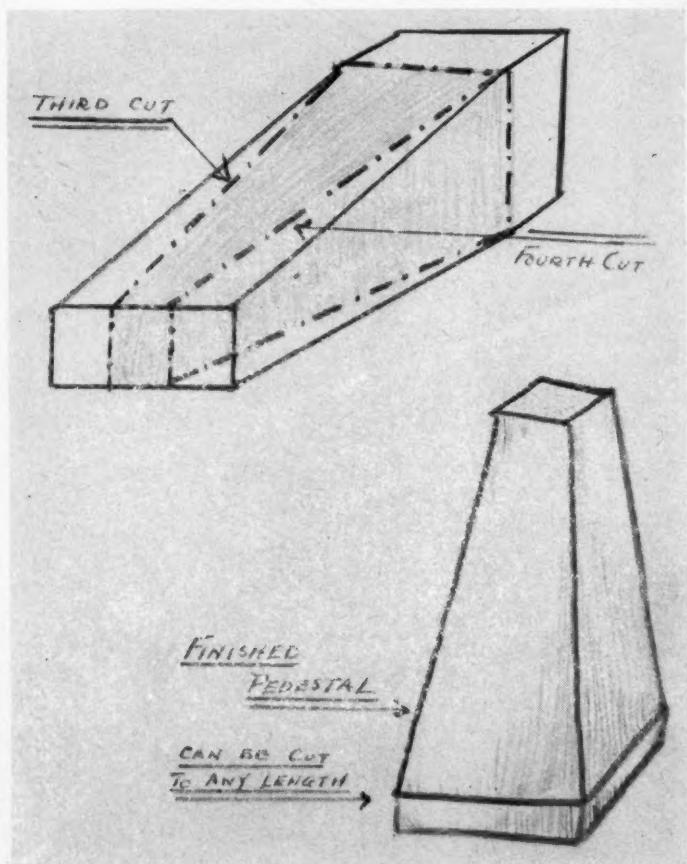


Fig. 2—Preparing pegs for mounting xls—last 2 cuts.

biage, that the paragraph at the beginning of this article, in boldface, be added. And if you haven't already drawn a will disposing of your property, we strongly urge you to do so immediately.

A few suggestions and admonishments are in order. Do not entail the gift. Do not stipulate its specific use nor insist that it be displayed as a unit. Few are

the private collections worthy of the space necessary to carry out this bequest. Bear in mind that the curators know better than anyone else the best disposal of your material. Consider, too, that leaving a collection to the ordinary, school, college or university will not usually offer the best utilization. Leave the collection to an organization specializing in minerals—one where the collections and

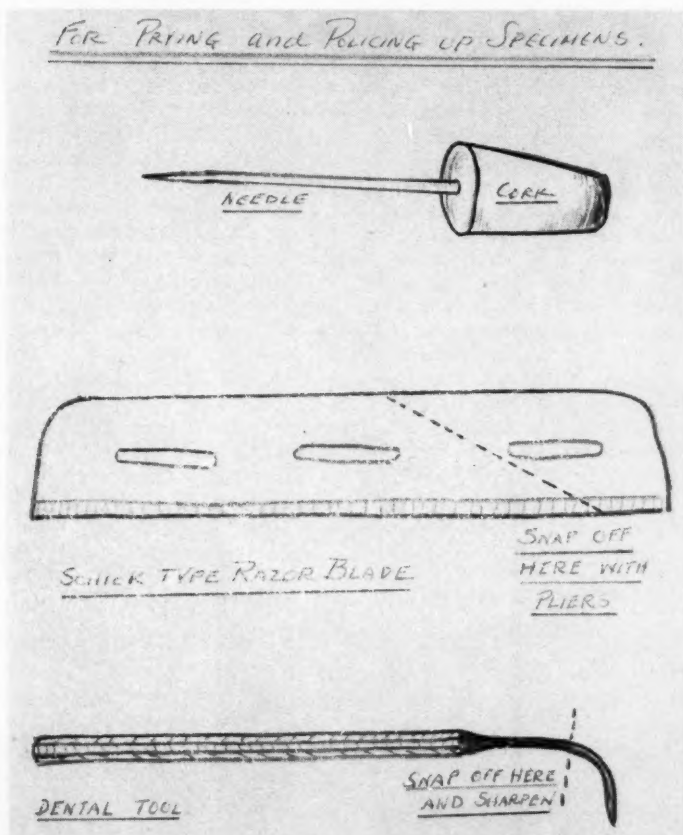


Fig. 3—Tools for probing and picking up specimens

interest outlive the individuals assigned and the facilities for use and care are perpetually established. We can think of 3 such in the East: — The Smithsonian Institution (U. S. National Museum) in Washington, D. C., the American Museum of Natural History, in New York City, and Harvard University, Cambridge, Mass. To these add the Royal Ontario Museum in Toronto, Ontario, and Yale University in New Haven, Conn.

Bear in mind that most colleges, universities and schools of mines, have working collections, and do not have the facilities for constant maintenance, care and expansion. Note that a fine collection at the Brooklyn (N.Y.) Institute of Arts and Sciences was dismantled and disposed of some years ago. And a collection of some 17,000 specimens at Wesleyan College at Middletown, Conn. is stored in crates, and is not available for view and study. We are not familiar with the museums and organizations in the Midwest and West. There is no doubt

that there are some that qualify eminently to take bequests of collections of minerals. We do know that the first three herein mentioned are. At all events, we urge you not to delay. Draw your will or codicil immediately.

And now back to micromounts. When we're ahead on our m/m work we like to make up a supply of pegs for mounting tiny xls. We take a $\frac{1}{4}$ inch balsa stick, cut it to lengths just under inside box height, sharpen the pegs almost to a point, and blacken them up, awaiting use. We usually take 4 cuts with a razor blade. Note the sketches.

For probing and picking we've used with lots of success 3 home made tools. A needle in a cork, an old dental tool sharpened, and an injector type razor blade, snapped off to make a fine sharp edge, work wonders. And the use of a magnet and thumb tacks to do an assembly line job on drying and mounting new specimens is a trick long promulgated by Phil Cosminsky, of Falls Church, Va.

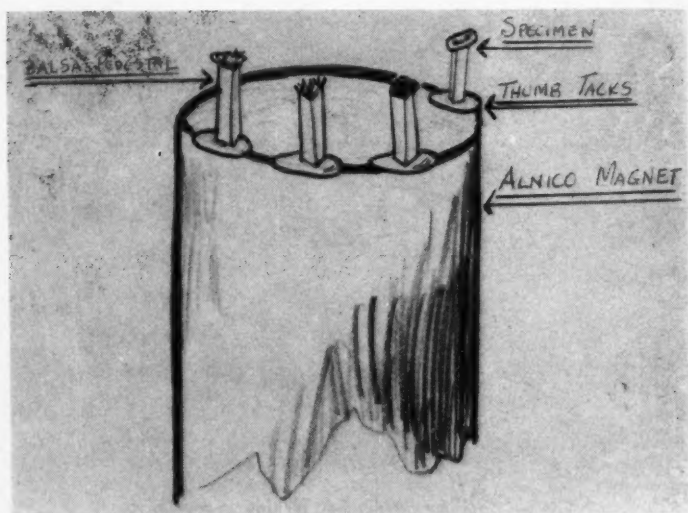


Fig. 4—An assembling line job on mounting and drying new specimens

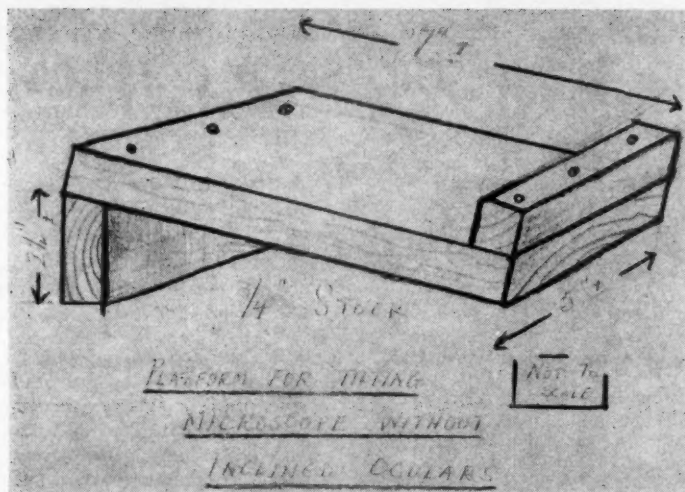


Fig. 5—Platform for tilting microscope without incline oculars

If your 'scope is one whose eyepieces do not tilt, and require that you lean far forward in viewing your specimens, an easily made stand is your answer. The sketch shows how it's done, altho there are no hard and fast rules. Use plywood, orange crate wood, or cheese boxes, if you have them. Or bend it from heavy

sheet steel or aluminum if you have the stock and facilities. And in a pinch prop up a book on a cracker box and go to work. Just remember, the emphasis is on the mineral specimen and not, repeat, not on the accessories.

Lastly, in order to do mineral collecting right, buy and use a good mineral book.

EASTERN FEDERATION CONVENTION SPEAKERS

August 4-6, 1960

An outstanding panel of speakers has agreed to speak at the 10th annual convention of the Eastern Federation of Mineralogical and Lapidary Societies in Asheville, N. C., August 4-6, 1960, according to show chairman Robert R. Williams, Jr. The convention and gem and mineral show will be held in the municipal auditorium.

The show will be opened by N. C. Governor, Luther Hodges.

Speakers will include Louis Perloff, Winston-Salem, N. C., "Mica Crystals;" E. T.

Ridgeway, Columbia, S. C., "Faceting;" Prof. John Hanahan, Belmont Abbey College, N. C., "Minerals of the Southern Appalachians;" "N. C. State Geologist Jasper Stuckey, "N. C. Minerals;" Georgia State Geologist Vernon Hurst, "Identification of Opaque Minerals;" Dr. Paul Desautels, Smithsonian Institution, "Crystal Growth;" and Commander John Sinkankas, USN, "Gems and Identification of Non-Opaque Minerals."

Further show information may be obtained by writing P. O. Box 1617, Asheville, N. C.



THE SAND COLLECTOR

CONDUCTED BY PETER ZODAC
PEEKSKILL, N. Y.

Beach sand from Sanibel Island, Fla

"We were fortunate this Christmas to find ourselves spending part of our holiday vacation on Sanibel and Captiva Islands, Florida. This lovely, unspoiled bit of paradise is at present reached only by ferry from Fort Myers. A bridge is soon to be built though, so many changes will undoubtedly take place.

"The enclosed sample of sand came from the southern end of Sanibel on the Gulf of Mexico side. We found a nice variety of shells, sea urchins, sponges and starfish. The sand here is not the pretty, dazzling white sand one sees at Destin, Fla. However one does not find the shells, etc. at Destin either."—item dated Jan. 19, 1960, from Mrs. W. S. Abney, 4454 Highway 51 S. Memphis, 16, Tenn.

The sample is a very fine grained, gray sand consisting of colorless quartz and white sea shells. Sanibel is a long narrow island lying close to and off the west coast of Lee County, Florida.

Beach sand from Cove Point, Md.

Cove Point, in Calvert County, Maryland, is on Chesapeake Bay, several miles south of St. Leonard. From the beach we have a sand sample that is medium grained, brownish in color, and almost all quartz (brownish, smoky, colorless) with some white sea shells and a very tiny amount of lustrous, black magnetite.

Quartz sand from Carlton, Minn.

From the Carlton County gravel pit, Carlton (Carlton Co.,) Minn., we have

a sand that is coarse grained and dark brown in color. The sample consists almost entirely of quartz (reddish agate, reddish chalcedony, reddish carnelian, grayish chalcedony, brown jasper, colorless rock crystal, smoky quartz) with tiny amount of black magnetite.

River sand from Verplanck's Point, N. Y.

Verplanck's Point, in N.W. Westchester County, New York, is on the east bank of the Hudson River. From Steamboat Dock Beach in Verplanck's Point, we have a sand sample which the conductor of the department personally collected. (He was guided to the beach by Mr. and Mrs. John Boyle of Peekskill, N. Y. Mrs. Boyle is the Editor's cousin.) The sample is dark gray, very coarse grained, and consists chiefly of clear and smoky quartz (some black basanite, brownish and yellowish citrine,) colorless glassy feldspar (some red also,) silvery muscovite, black biotite, black magnetite, and a little green epidote. Blackish to gray phyllite, red and black slate, and, not too surprising, considerable red brick (years ago the Hudson River was famous for its brick yards which extended for many miles.)

Ant Hill sand from Custer, S. D.

From an ant hill in Custer (Custer Co.) S. D., we have a sand sample that was sent in by Mrs. Ed. P. Olson, Beresford, S. D. The sample is coarse grained, dark brown, and consists entirely of dark brown quartz (the brown color is due to brown clay.)

Beach sand from Ocean City, Wash.

Ocean City, Grays Harbor Co., Wash., is on the Pacific Ocean. From Oyehut Beach in Ocean City we have a sand sample that is dark gray and very fine grained. The sample consists of quartz (colorless, smoky, brownish,) grayish feldspar, black hornblende, black magnetite, and some greenish epidote.

River sand from Andorra

Andorra is one of the world's smallest republics. The little country is situated between Spain and France. From the Gran Valira River in Andorra we have a sand sample that was collected for us by Juan Montal, Plaza Sgdo, Corazon 1, Vilafranca del Panades, Spain.

The sample is a dark gray, coarse grained sand. It consists of black slate, quartz (smoky, brown,) black biotite, whitish muscovite, black magnetite, black mica schist, gray limestone, and brown limonite.

Sand from center of Gran Valira River, 1000 meters south of the city of Andorra, Andorra."—on label.

Beach sand from Botany Bay, Australia

Botany Bay in eastern New South Wales of S. E. Australia, is on the Pacific Ocean. The bay, which is 5 miles south of Sydney, was discovered by Capt. James Cook in 1770 and received its name from Joseph Banks, the botanist of the expedition with reference to the great number of new plants found there.

From Botany Bay we have a sand sample that was collected a few years ago by Wilfred C. Eyles, 88 6th St., San Francisco, Calif., while on one of his many trips to Australia. The sample is a medium grained, brownish sand consisting of quartz (colorless to smoky) and brownish sea shells. Though the shells represent about one-fifth by volume of the sand, it is enough to give the sand its brownish color. The sand was collected from the spot where it is marked that Capt. Cook landed when he discovered Australia.

Lake sand from Lake Clear, Canada

Lake Clear is a large lake in S. E. Ontario, about 80 miles west of Ottawa,

the capital of Canada. From the western shore of Lake Clear we have a sand sample that had been collected for us by E. J. Talamini, 164 Chestnut St., Kearny, N. J. The sample is a medium grained, dark gray sand. It consists chiefly of quartz (colorless, transparent, smoky) and feldspar (whitish to pinkish) with minor amounts of pinkish garnet, green epidote, black magnetite, whitish muscovite, and black tourmaline (some show xl faces.)

Dune sand from Ghom, Iran

"Ghom (listed as Qum or Qom on many maps) is approximately 60 miles directly south of Tehran (capital of Iran.) The sand sample was obtained at a point about 15 miles north of Ghom near a village called Allabad and near a dried up salt lake. This is desert area and the sand was picked up from one of the dunes near a dried creek where sand was being excavated for commercial use. The entire area extending for at least 20 miles is a desert region where the winds have scattered agate and chalcedony, and the hot sun has caused agate to fracture and disperse."—letter dated Oct. 31, 1959, from Mrs. Sylvia Czayo, American Embassy, APO 205, c/o P. M., New York, N. Y.

The sample received was a medium grained, brownish sand. It consists of quartz (gray, green, blue chalcedony, colorless quartz, colorless rock xl,) a little black magnetite, and brown clay. Some large fragments of chalcedony (gray, greenish to blue) were also included with the sand.

Beach sand from Progreso, Mexico

Last year Mrs. Helen Wiebe, 310 Beach Ave., Mamaroneck, N. Y., made a trip to Mexico where she collected opals, minerals, shells, and even a sample of sand for the Editor of R&M. The sand was shaken out of some sea shells she had picked up on the beach at Progreso. Progreso is on the north coast of the State of Yucatan, Mexico (the beach is on the Gulf of Mexico).

The sample is a fine grained, gray sand. It consists entirely of sea shells (white,

brown, pale and pink) and it fl. yellow under the short wave and pale lemon-yellow under the long wave.

Beach sand from St. Andrews, Scotland

St. Andrews, in Fifeshire of eastern Scotland, is on the North Sea. From the beach at St. Andrews we have a sand sample that had been sent us by Sandy Ramsay, 1015 Aikenhead Rd., King's Park, Glasgow S4, Scotland.

The sample is a fine grained, brownish sand. It consists chiefly of sea shells (chiefly brown, but some white and blue also present) and colorless quartz. A little pinkish garnet and black magnetite also present.

"Beach sand. East Sands, St. Andrews, Fife, Scotland. This place is known as the Mecca of golf and as such is famous all over the world."—on label.

Beach sand from Izmir, Turkey

"The enclosed sand sample is beach sand from the shores of the Bay of Izmir

(better known to Americans as Smyrna) not far from the site of the ancient port of Clazomenae, one of the original twelve Ionian cities. The colors in this sample are bright and varied and many of the grains, when examined under glass, resemble gemstones, but my knowledge is too limited to make identifications. A few tiny sea shells are also seen."—letter dated Dec. 29, 1959, from Donald B. Eddy, American Consul, Izmir, Turkey.

The sample is a coarse grained, dark gray sand. It consists of quartz (colorless, smoky, also red jasper,) black lustrous magnetite, gemmy green epidote, red granite (some pieces have minute grains of green epidote imbedded,) and white sea shells. It is the colorless quartz and the epidote that resemble gemstones and in fact they really are—gemstones in the rough.

Izmir is in western Turkey on Izmir Bay which is an arm of the Aegean Sea.

Information Wanted by Readers

WHAT IS A MUD CRYSTAL?

I would like to know what is a mud crystal? Is it a mineral but if not what is it? I saw a picture of one with a caption "Giant Mud Crystal" from Brazil, weighing 20 lbs. It looked like what I would call a "chopped up quartz crystal."

John J. Klunk
354 Penna. Ave.
York, Pa.

Ans.—This is a new one to us. Can any reader answer this question?

ADDRESS WANTED

I would like to know the whereabouts of Harold Verrow who formerly resided in Gorham, New Hampshire. I haven't seen or heard from him since 1942. Can any reader help me?

Also, does anyone know of any possibility of my making any contacts in France to procure some of the fine mineral specimens from there?

Merle R. Reid
2192 S. Zenobia St.
Denver 19, Colo.

Ans.—Harold Verrow was a subscriber of R&M for 6 years during which time he wrote some very fine articles for us on N. H. Minerals. In 1943 he moved to Hartford, Conn.—later he moved to California we believe, but we never heard from him anymore. Perhaps some reader may know his present address.

MINING SCHOOL WANTED

I would appreciate it if some reader could recommend a good college or mining school that trains mineralogists. I would prefer a mining school in one of our western states.

Richard D. Armstrong
1036 N. 33rd St.
Decatur, Ill.

Ans.—There are many good mining schools in the country, chiefly in the west, and most of them subscribe for R&M. The oldest mining school in the country and the one who has been with us the longest (since Sept. 22, 1926) is the Colorado School of Mines, Golden, Colo. We have subscribers in practically every mining school so perhaps some of them will write you, recommending their school.

THE AMATEUR LAPIDARY

Conducted by Major George W. Owens, U.S.A.F. (Res.)

Queries and correspondence should be mailed to R&M Attn: The Amateur Lapidary

CHALCEDONY

All chalcedonies are cryptocrystalline. Under this heading are our agates, jaspers, and petrified woods, etc. Thousands of articles have been written on this one subject. It is probably the best known of any of our gem groups. Certainly there is scarcely a collection in this broad land of ours that does not contain a chalcedony in some form. Every year thousands of collectors hunt our hillsides, streams, and deserts in search of some type of Chalcedony. There are several hundred names applied to this one mineral—some correct, some misleading, some of purely local origin, while others have been in use since Biblical times. Moss agate, red jasper, banded agate, fortification agate, poppy jasper, and sard, are a few of the many names in current use.

Chalcedony occurs almost everywhere. Quality chrysoprase agate is found in Arizona, California, Oregon, etc. and jaspers are from coast to coast. Agatized wood is found in Arizona, California, District of Columbia, Maine etc. Prase and plasma are found in India, Germany, Oregon, and along the San Simone Creek in California a small amount can be found. Agate in many other types is found in practically every state in the Union. Horse Canyon, California is noted for its fine agate with green inclusions. Mule Canyon, California is well known for its fine dendritic agate, and Nipoma, California for its outstanding sagenite agate. Each state has its own locations and its own types of agate, e.g. Arizona being noted for its petrified wood. And so it goes.

Practically all agate will respond to a certain more or less standard type of cutting treatment. This, coupled with the ease of attainment, makes it the most popular single mineral in amateur hands. Chalcedony occurs in color ranges from

transparent white around the color chart to absolute opaque black. Practically every other mineral known to man has been found as inclusions in chalcedony. Iron and copper have given us some beautiful colorings and inclusions. Other minerals and their oxides also give us lovely scenic agates, "tree agates", bloodstone, dendrites, etc.

The solid whites, grays, browns, are usually termed "chalcedony." When this material exhibits lines, markings, inclusions, etc., it is most generally termed "agate". Jasper is usually considered as opaque material of one or more colors, and when portions are more clear, the term "jasp-agate" has been used.

Some agate will display a moveable light similar to adularescence. Such agate has been termed "moonstone" which is an incorrect name. True precious moonstone refers to a definite type of feldspar.

We amateurs grind, polish, and display tons of agate each year. Some are good while others are bad. One could spend a lifetime just learning locations that exist in these United States. Pick up any issue of R&M and you will note advertisements for books listing locations, offers of rough agate, agate cabochons, etc. Without chalcedony our hobby would probably not grow, and so it is of prime importance to every mineral dealer and collector.

If one has the patience, chalcedony can be worked by hand. Most of us have either a simple grinding and polishing wheel unit of homemade origin or a "store-bought" machine that is simple of operation. Many fine cabochons have been cut on the small horizontal units having a single bearing. These machines are low in cost and will give satisfactory service over a long period of time. The better and more expensive vertical type units are rapidly approaching the apex

of perfection. The owner of one of these units saves many hours of time in his cutting efforts and can turn out better than commercial type work with the minimum of effort. Our objection to most of the vertical type cabochon units is that everything: saw, grinding wheels, and polish head, run on the same shaft. Someone will soon produce a unit which will allow selection of operation without motor or belt changes. Several companies produce a standard priced unit and a deluxe model. Average cost of most of the factory made cabochon units seems to be excessive. Anyone with a bit of mechanical ability can easily rig a multi-wheel unit, less trim saw, that will give just as good service as some of the expensive factory units. However, we have no bone to pick with any of the commercial people (bless them). They are entitled to a reasonable profit. We know several of these fine folk and are aware of the great help they have been in our interesting hobby. A good many have freely given their time and effort to help beginners, clubs, and individuals. Fortunately, nearly everyone of these chaps were amateur collectors and lapidists before they became professional manufacturers of equipment. Unlike one "authority" we know who now advises dealers how to sell their wares, whose word is almost law in some of our western states, yet has never cut a gem—your average dealer and manufacturer has thousands of gems to his credit. He knows polish methods and cutting techniques from experience. He freely shares his knowledge and help. A good piece of equipment in your shop from one of our dealers not only bears his name but is his personal guarantee that with the proper use, you can turn out beautiful gems. Most of the reliable dealers have advertisements in

ROCKS AND MINERALS.

In fashioning chalcedony you will learn that it is tough, has an average hardness of seven, and is capable of very high polish. Several oxides will polish the entire range of chalcedony. Tin oxide is a fine polish but we object to its use because it is a poison. Cerium oxide is now the stan-

dard. It is a "clean" polish, not poisonous, does not stain, and gives a "fast" high polish. It may be used with a number of polish wheels (felt, cloth, wood, leather, etc.) Chrome oxide is still used by some for jaspers, but its staining ability on hands, cloth, walls, and floor is almost better than its polishing power. It has its place in the polish of certain other minerals but cerium oxide is superior for all chalcedonies. Agate may be cut, carved, and shaped into nearly every style of fashion known to man. The lovely carvings of fish, birds, dogs, etc. from Germany and the Orient show that the versatility of the cutter is the only bar to any design in this most adaptable mineral. Every year thousands upon thousands of fine cabochons, spheres, and other objects of art are cut by amateurs. Of all the cabochons, probably one in ten thousand is a masterpiece of design choice and workmanship. Fine agates and jaspers have graced milady's fingers since early antiquity. Amulets of jasper graced the Crusaders and today's lovely agate is to be seen on many ensembles of fashion.

Chalcedony in the form of sardonyx is the birthstone for August and March claims bloodstone, a fine jasper. So two of the twelve months are given to this one gem mineral. Not only is it important in jewelry form but according to the Bible, the Walls of Heaven itself rest on chalcedony. Truly, this is a gem of merit!

In cutting agate, the skill of the lapidist is the only limiting factor. Extremely large "flats" have been cut and polished. Cross-sections of petrified logs are on display in several museums and at the National Petrified Forest in Arizona, some of those large flats were achieved back in the days before the diamond saw. They were sawed in an ingenious device called a "mud saw". This type of saw was a large plain iron or steel disc which was rotated by a shaft. A mixture of carborundum grits, water, and any "thickening" agent was allowed to drip on the spinning disc. This method, while messy and antiquated by today's methods, is

still a sound inexpensive way to saw extremely large slabs. Speaking of such "heavy" equipment, the largest diamond saw known to us is one in use in a granite quarry in Italy. This huge saw has teeth about 5 mm in width, approximately two teeth to the inch, each containing a single diamond (bort) of about half-carat weight. The saw is almost seven feet in diameter. Truly, this is a giant! We would like to have the use of it to saw that jade boulder in a creek near Covelo, California. This is probably the largest single piece of jade in these United States. Due to its location and the surrounding terrain, it will probably remain in the stream forever.

Agate has been used in everything from silverware handles to watch movements, ornaments of all types, laboratory equipment, dishes, vases, cups and saucers, jewelry boxes, snuff boxes, and table tops. You name it—and at some time or another, agate has probably been used to make it! Agate chess sets are known. Finger rings, napkin holders, and place card settings have been made of agate. The town of Idar-Oberstein in Germany is more famous for its production of agate gems and carvings than for its work in the other gems. Japan, at the city of Kofu, has rivaled anything the world has ever seen in the way of lovely carvings in this media. Those of you interested in such items should contact our friend Mr. Yanagisawa of the Yanagisawa Company, P. O. Box 2, Kofu, Japan, for a list of their many products. Their workmanship is excellent, prices reasonable. Please mention our column when writing to them.

Perhaps one of the most interesting and intricate bits of agate workmanship is a clock constructed mainly of agate. It was on display in a little shop just off Holborn Circus in London. We tried to buy it but it was not for sale. Visitors to England could well spend their entire holiday in the Hatton Garden area of London. Perhaps the greatest concentration of gems in the world is in this area. Many of them are agate. At least, on your tour, stop by and walk the street from

end to end. Such a walk is an education in gems. While in England, plan to call on Mr. Kenneth Parkinson, 11 Fitzroy Street, Hull, England. Hull is a quaint old town and should be on your list. "Ken" is a practicing gemmologist, has a very fine lot of agates to offer as well as many rare items. One of his recent acquisitions is a "lot" of three-colored agate blanks most suitable for intaglios or initial carvings. If you can't visit him, mail him a dollar and receive two or three blanks. You will enjoy corresponding with Ken as he has a fine sense of humor and a keen understanding of gems.

Once in a while we wonder if anyone ever reads our literary efforts, and then along comes a fine letter like the one just received from D. Hallwood, 344 Brookdale Ave., Toronto 12, Canada. He tells us he is just starting in our hobby and is an avid reader of this column. Makes us feel really fine to get letters like this one. Any of you good people who feel so inclined, might send him a nice slab of your local material to help him get started.

We received a very interesting letter from a chap in Minnesota not long ago. I had never considered the possibility or explored the problem, but this fellow hobbyist is one-armed. He tells us he does not make cabs or facet, but sticks to slabs and the like, because of handling ease. We became intrigued at this statement. Selecting a fairly small slab of quality agate to try, we succeeded in turning out a passable small cabochon using only one hand during the entire operation. Several problems were encountered, such as chipping. All were solved. We believe our friend could go into cab work and be successful if he so chooses. The interesting aspect of this is: Have you ever considered the other fellow's problems in our hobby? We remember once vainly trying to achieve an acceptable polish on a facet of a "tough" stone. It just would not polish! We were about to quit trying when a friend stopped by and seeing our state of complete frustration, suggested he try his method. We watched him place a twist in the motor belt, caus-

ing the lap to run in reverse. The facet "took" a lovely polish in no time. So, now when we are inclined to tilt with windmills, we remember this incident, and run in reverse for a while. It does not always solve the problem, but allows us to plan other methods to try.

Some agate gives us such polishing problems due to soft inclusions it will undercut despite our very best efforts. A few of us have learned to live with such undercutting; others are still trying to achieve the perfect polish. We recently tried a plain lead lap, grooved to approximate contour of the cab. Using Linde A and water coolant we succeeded in polishing a Texas moss that had always "pulled" and undercut. Examination under a 10-power glass revealed wee small lines, some competely filled with lead. However, this was the highest polish we had ever obtained on this particular type material. Anyone having a fairly fool-proof method for preventing undercutting is encouraged to tell us about it.

Agate can and does vary in hardness. The average is 7, but some jaspers will go as low as 6.5 and some agate as high as 7.2. Hence different polish methods sometime result in superior polishes. We are all aware that a high polish on tiger-eye is usually the result of careful sanding and then polishing on leather. Have you tried polishing this material on a wood lap? Try it. You might be amazed at the result.

Agate, jasper, tigereye, sard are all beautiful and desirable. Size and form are dependent on the artist. How is your collection growing? Have you added a stone this month? Why not? Now is a good time. Clubs are planning their shows and the agate you cut today may be the blue ribbon winner at the next showing. A recent note from the Tulsa, Oklahoma club tells us they are planning great things. You folks in the older established clubs had better look to your laurels. These Tulsa people are going all out! And some of their agates are real museum pieces, too. The collection of the Arden Meek's is growing and they should be bringing home some plaques and blue ribbons before long.

Is your collection ready for display?

ALMOST INCREDIBLE!

On page 217 of this issue is a most interesting article, "Fluorescing Pegmatite in Maine", by Stearns J. Bryant. One of Maine's famous mineral collectors, Chas. F. Marble, Buckfield, Me., visited the locality and he writes:

"A few weeks ago I had the privilege of visiting the new Fluorescent Mine in Hebron, Maine. It is almost incredible, even after you see it. Scattered all over the ledges, under the U.V. light, are patches of blue - golden - red - and green color from a pin point size to more than a foot across. It is really all they say about the mine."

ATTENTION ADVERTISERS!

During the entire month of July 1960, the Advertising Office of **ROCKS AND MINERALS** will be closed. The Advertising Manager and his family will be away on a long vacation—heading for the West Coast.

James N. Bourne, Adv. Mgr.
ROCKS AND MINERALS



Fossil Department

Short items on fossils and their localities are wanted.

Please send them to the

Fossil Department (Rocks and Minerals), Box 29, Peekskill, N. Y.



ALABAMA—"We have many fossils near our school where I teach a science unit on rocks. Along with blastoids we found others which we were unable to identify. We would gratefully appreciate if you would identify the three I am enclosing."—item dated March 12, 1960, from Elizabeth S. Howard, Box 229, Fort Payne, Ala.

The 2 loose, slender, brownish fossils are crinoids. The 3rd and larger, radiating fossil, is a coral. See March-April 1960, R&M, p. 137, under "Tennessee" for a description of crinoids.

IOWA—A most interesting letter, dated Jan. 4, 1960, was received from Richard S. Barber, 3404 S.W. 13th, Des Moines, Iowa. It reads:

"For fossil hunting in Iowa, there is a quarry at Pella (Marion Co.), Iowa, to be exact, 2.4 miles east of Pella. The quarry lies on both sides of the road. In the south quarry plant fossils are abundant; in the north quarry invertebrate fossils are abundant. Here is a list of fossils that can be found at the locality, starting with the north quarry.

1. *Pentremites Conoideus* (Blastoid). This Echinodermata is relatively small being so far found only as big as a large pea. I collected about 45 of these which, I might add, are hard to find, being small, but they are there to be found.

2. *Spirifer Pellaensis* (Brachiopod.)

These brachiopods are very abundant and when cleaned the good ones make excellent specimens, some reach a size of 3 to 3½ inches.

3. *Zaphrentis Pellaensis* (Horn Coral.)

In size these are from ¼ inch to sometimes 3 inches or longer.

4. *Productus Ovatus* (Brachiopod.)

This brachiopod is sometimes found

with spines but it is very hard to find one that is complete.

5. *Bryozoa*.

There are several different kinds of bryozoa to be found but they are all broken up.

6. *Composita Trinucleus* (Brachiopod.)

This brachiopod is found complete most of the time and is also abundant

7. *Orthotetes Kaskaskiensis* (Brachiopod.)

These are seldom found complete but when they are they are nice.

8. *Girtyella Indianensis* (Brachiopod.)

These brachiopods look like seeds but are found complete most of the time.

9. *Clothyriridina Hirsuta* (Brachiopod.)

These are very small, being only ⅛ of an inch, sometimes reaching a ¼ of an inch.

10. *Pugnoides Ottumwa* (Brachiopod.)

This fossil is small but nice. It is an odd-shaped brachiopod having deep grooves on the top and bottom valves.

11. *Griffithides Wilsoni* (Trilobite.)

These fossils are seldom found complete but they are there to be found. I have found so far free cheeks, pygidiums, cephalons, but not all attached. Also this fossil seldom reaches the size of an inch.

12. Found also at the quarry are fragments of sharks' teeth, sometimes they are complete. These are called *Bradyodonts*.

13. Crinoid stems are found ranging from 1 millimeter to ⅜ of an inch across, but I have yet to find a complete specimen in this formation although I have found one badly crushed basal plate.

14. *Echinoidea Spines*.

These are hard to find. I have three, one is complete.

15. The last specimen in the north quarry but not least is the internal casts

of pelycypods. These are difficult to identify being that they have no external shell.

Going to the south quarry we find the following plant fossils:

1. *Lepidodendron*.

This plant grew to be 100 feet high. It was erect and branched. It was fruit and between seed and spore. The outside covering was a thick cork layer.

2. *Sigillaria*.

This plant also grew to be 100 feet high but while it was erect it was not branched. Its diameter was sometimes 6 feet. It also had a covering of thick cork.

3. *Equisetalis*.

These are represented by the calamites. They had a hollow stem or sometimes a pithy one. The plant grew to be 60 to 90 feet high. It had a real thick cork hide, 2 inches plus in some individuals. The plant grew somewhat like our jointed rush.

"That's a run down on the fossils that can be found and collected at the quarries. I might add the quarries are of the Mississippian age, between 225 to 300 million years old. The formation is the St. Genevieve. Selenite and pyrite can be found in both quarries.

"One final point I would like to add is—both quarries have deep holes filled with water. Ask permission to enter. Do not disturb the machines. Above all, please be careful when collecting."

MARYLAND—"I am a very recent subscriber to the wonderful magazine, R&M, and I cannot begin to praise it enough. Its benefits to an amateur collector like myself are limitless.

"In Saint Marys County, Md., I have found dozens of sharks' teeth, some being nearly the size of a man's open hand. The teeth are found in or on the beaches of the cliffs that overlook many sections of the shoreline. The Calvert Cliffs, 30 miles south of Washington, D. C., are very famous for fossil finds. The best time to look for fossils is early spring, because no one has been to the beaches during winter.

"I have found many fossils but because I am an amateur, I do not know what is what. There is so much to be found in these cliffs. Would R&M suggest a book that would give me information on a wide range of sea fossils?"—item sent in by Phil Kingry, 409 St. Lo Place, Lexington Park, Md.

A good book on fossils for the amateur is "The Fossil Book," by Carroll Lane Fenton and Mildred Adams Fenton, published by Doubleday & Company, Inc., 575 Madison Ave., New York 22, N. Y.—Price \$12.50.

MICHIGAN—"I have collected fossils for years from many localities throughout the states, but my favorite 'stamping grounds' are still the sandy shores of Lake Erie in my home state of Michigan. I say this not only because the fossil hunter never leaves the area without a few specimens but because a large majority of the specimens are matrix-free and are often semi-polished by the action of water and sand.

"It is easy to find many kinds of brachiopods, including the beautiful 'butterfly shells' (*Mucrospirifers*.) Numerous types of corals—the Rugose 'horn' or 'cup' corals, 'honeycomb' coral (varieties of *Favosites*.) and the hexacorals—are abundant. Literally hundreds of crinoid stem sections and single 'star' crinoids (called 'lucky' stones' by the Indians) can be found by the sharp-eyed collector.

"A diligent seeker can also occasionally find fossilized teeth, mostly of Ice Age mammals. Although two groups I have found have been identified as teeth of the American Mastodon, most defy identification because of the lack of strata. If you are really lucky you might find a section of trilobite. I have found one almost complete one, a *Phacops* rana.

"The area is the sand close to shore on any of the private and public beaches along Lake Erie between the towns of Newport and Monroe, Mich., which can be reached via old North Dixie Highway (not the freeway.) Bathing beaches at Detroit Beach (private,) Woodland Beach (semi-private,) Indian Trails (pri-

rate) and Sterling State Park (public) are good hunting grounds. Usually simply explaining your purpose to the gate guard will get you into the private beaches, as they are usually closed only during the swimming season.

"Speaking of seasons, obviously the summer is *not* the time to hunt here. Early autumn until the Lake freezes and from the first thaw until mid-May are best, not only because the beaches are deserted but because the water level is at its lowest, exposing more sand and the best collecting area. All you need are good eyes to search along the shore, and don't forget to look carefully at groups of washed-up shells and washes of small stones, and kick a few seaweeds aside, too, to look underneath. It's good hunting."—item sent in by Mrs. Cecilia E. Duluk, 6700 Amboy, Dearborn 6, Michigan, together with some fossils.

All fossils received were found on the sand at Detroit Beach near Monroe (Monroe Co.,) Mich., on Lake Erie. They are a group described by Mrs. Duluk in the above article—every fossil is loose, dark gray, and of good quality.

NEW YORK—The following item, dated Jan. 24, 1960, was sent in by Gary Taylor, Route 5, Akron, N. Y.

"Enclosed are several excellently preserved specimens of tetracorals found in a fossilized coral reef 1 mile west of Williamsville (Erie Co.,) N. Y. Also found at this reef are tabulate corals, crinoids, brachiopods, as well as gastropods and graptolites. The fossils are of Devonian age which makes them over 300 million years old! This fossil-bearing coral reef is said by paleontologists to have produced the best known examples of Devonian life in the world. It is therefore a shame that the collecting area is to be closed and buried under an interchange of a New York State Thruway extension. The coral reef fossils will therefore become rare and valuable in the future."

Four loose, dark gray fossilized corals

were received—each about 1x1 inch and all very nice.

OHIO—"I am sending under separate cover a few fossils which are common in this area. I am not particularly interested in fossils however; I am certain some of your readers would be interested in trading 2"x3" mineral specimens for excellent examples of the fossils which abound here.

"The fossils I am sending were taken from Clover Creek, 3 miles north of Bethel (Clermont Co.,) Ohio. They are of course Ordovician in age. Should you desire more information such as formation, etc., I will be glad to send it. If there is anything I can do to help create interest in the Fossil Dept. just let me know.

"Perhaps you wonder why I bother to write since I am not interested in fossils. I live in an area where there are very few mineral collecting spots and I felt there may be a fossil collector in the same sort of fix."—letter dated Feb. 10, 1960, from J. J. Hauser, c/o H&S Superette, 212 Plane St., Bethel, Ohio.

Specimens received were dark gray, loose bryozoa—very nice and most interesting.

PENNSYLVANIA—"There is a small stream near Franklin (Venango Co.,) Pa., that runs over a bed of very old flagstone. Imbedded in these layers of rock are fossils of several types. Among them and most noticeable are a form of mollusks, very similar to our present day mussels but they only reach a maximum diameter of about $\frac{3}{8}$ of an inch. These are complete shells and are as bright and well preserved as when they were living.

"Collectors should have a pair of rubber boots, a pick and shovel, a guide, and above all, permission from the owners.

"I have never explored this location very thoroughly and I suspect that there are other worthwhile fossils there."—item dated Dec. 8, 1959 from Ben W. Lesh, R.D. 3, Franklin, Pa.



WOMEN'S CORNER OF R & M

Conducted by Winnie Bourne

c/o Rocks and Minerals

Box 29, Peekskill, N. Y.

Good Pickings At a Picnic

Dear Winnie:

We, too, have had some good luck. Let me tell you about our picnic that turned out to be a very successful mineral trip. We found beautiful white natrolites.

One morning about 9 A.M. we decided to take a lunch and go to Red Rock Canyon. This is about 52 miles north of Mojave, Calif., so we had about 100 miles to drive to our destination. We arrived about noon, ate our lunch, and set out to see what we could find. There had been some rain in the near past as the creek bed was still wet. This was to our advantage, too, for the water had uncovered some new basalt rock. This is what the natrolite crystals occur in. We had been to this location before without proper tools so now we were prepared. We came across a fairly large basalt rock and started to break it carefully. To our amazement the first chunk of basalt that broke off contained a beautiful little crystal lined geode with the group of natrolite crystals standing at the bottom. As we continued to break the rock, we found more and more of these perfect little geodes containing natrolites. The specimens also come as individual natrolite groups. To my notion, these are perfect micro mounts. They are white in color and are of the clear crystal type instead of the hair type.

After working for about three hours, we decided it was time to head for home as we knew we would want to admire each and every specimen when we arrived home. Tired and weary, but very

well pleased, we retired about 1:30 A.M. To us our day was complete. The family had been together, we had a picnic and had found some beautiful specimens.

Naoma Brooks
19419 Haymes
Reseda, Calif.

P.S. Seems I have so little time to write letters but do enjoy the Women's Corner and will try to write a few experiences of ours for you from time to time. Hope you can use this.

As ever,

Naoma.

NOT A ROCKHOUND, BUT WHAT A COLLECTOR!

Dear Winnie,

I have read with much interest the letters appearing in your column.

I am not a full fledged rock hound as my knowledge of minerals is limited but I have accompanied my husband on many collecting trips.

We have collected from Wyoming to Maine, through New England and the Southeastern states.

One of our most delightful trips was to the iron and copper country of Michigan. We came home loaded with specimens. One of our choice finds was a chunk of native copper with a piece of native silver in it the size of a small egg. Halfbreeds, the miners call them.

Our specialty has been geodes. We have collected them in Iowa, Missouri, Kentucky and southern Indiana. We have collected hundreds of them in southern Indiana, but it takes time and a knowledge of localities to find them.

We have found beautiful, sparkling, milky quartz, chalcedony in many colors, calcite in different forms, including dog tooth crystals, those that fluoresce creamy white and yellow and solid calcite nodules, whose centers fluoresce red. Also quartz with goethite needles on the crystals, solid sphalerite nodules, dolomite crystals on quartz, pyrite cubes on quartz and others. One we found had gypsum inside in a powdery form, the only one of this kind we ever found.

We have over 100 polished thunder-egg halves and many pieces of beautiful polished western woods and geodes from many western localities, some 3000 to 4000 specimens in all.

Among the many beautiful and interesting specimens from South Africa are two chunks of kimberlite in which diamonds are found. Friends have suggested that we break them open as we might find a diamond, but so far we have resisted the urge to go diamond hunting.

We have spent many happy hours together collecting and have many happy memories to recall.

Mrs. Walter Reeves,
R3, Greencastle, Ind.

9 year old Miss interested in rocks!

Dear Winnie:

My nine-year old daughter is an enthusiastic rock hound and, encouraged by her father, is cataloging her collection and learning to cut and polish cabochons on their newly-acquired machinery.

As we were spending a day recently walking along one of the Aegean beaches nearby, looking for unusual stones, she suddenly looked at me and said, "Do you ever wonder as you wander if the waves cry as they die upon the beach?" I was astounded at the poetic sound of her question. She assured me she'd never heard it anywhere, so I told her to think of it as a poem, add a little more to it, and we'd send it in to your magazine as a filler. It was inspired by rock hunting, but if it is too far removed from mineralogy to find a place in your maga-

zine we will understand why it doesn't appear. Here is Andrea's contribution:

Do you ever wonder as you wander
If the waves cry
As they die
Upon the beach?
Or if they break in glory
On the rocks,
A soul in each?

Andrea Collins Eddy

In any case, thank you for your kind attention to this letter. We all enjoy
ROCKS AND MINERALS.

Mrs. Donald B. Eddy
American Consulate
Izmir, Turkey

A MINE EACH DAY FOR A WEEK!

Dear Winnie:

Husband and I had a wonderful time on our vacation last August in Waterford, Maine. We were in a locality of 7 mines. Each day for a week we visited a different mine. We came back with so many specimens it was difficult knowing which ones to discard to lighten our load.

We also met many rock hounds and it was a pleasure talking with them.

Mrs. Robert E. Foote
484 Grove St.
Woonsocket, R. I.

WISHES R&M A LONG LIFE!

Editor R&M:

Words cannot express the pleasure I get reading R&M. I hope you keep up the good work for many years to come and I further hope I will be able to read it for many years.

Harry A. Laurent
Box 645
Nashville, Mich.

2000 MICRO-MOUNTS. WOW!

Editor R&M:

Haven't been very active in minerals lately except for micro-mounts, but have passed the 2000 mark in micros.

Phil Cosminsky
303 N. Virginia Ave.
Falls Church, Va.

P.S. The Editor has only 6 micros. How sad!!!

A BERYL CRYSTAL FROM SCOTLAND

We are indebted to Sandy Ramsay, 1015 Aikenhead Road, King's Park, Glasgow S4, Scotland, for calling our attention to a 9½ lb. beryl crystal that was recently collected from an abandoned feldspar quarry on Loch Nevis. A letter from Sandy states:

"This Loch Nevis locality is almost inaccessible and the professional collector who got it, Bill Davidson, 9 Castle-gate, Penrith, Cumberland, England, flew it out by helicopter, later he sold it to the British Museum. Bill tells me that

he has no beryl xls at the moment for sale."

Now for some notes on the locality and for this we will quote from Mr. Davidson's letter, dated Nov. 3, 1959.

"Sandy Ramsay asked me to drop you a line about the beryl crystal I got from the Loch Nevis locality. (Loch Nevis in Inverness-shire is in the western part of Scotland).

"The locality was worked for mica in the 1939-45 War and consists of several small quarries on top of a 2,000 foot



THE BERYL CRYSTAL

Loch Nevis mica prospect, Knoydart, Inverness-shire, Scotland.

Dimensions: Top 6"x4½", Height 7½"; Circumference 17½"; Weight 9 lbs.
Supplied to British Museum.

mountain in Knoydart, north of Loch Nevis.

"Abundant tiny garnets and much massive beryl occur in the pegmatite and when the locality was worked, crystals of beryl up to a foot long were obtained. It is difficult to trace material collected from there during the war.

"My first visit was by car to Mallaig followed by the charter of a motor launch which took me up to Loch Nevis at a cost of four pounds. The track up the mountain is very steep and frequently disappears. The mist came down before I got to the top so the trip was wasted.

"A repeat expedition on the following

day brought only a 3 inch crystal section of beryl and a lot of massive stuff.

"Last year I was at Strontian in Argyll, Scotland, and a helicopter was there at the disposal of the Ordnance Survey.

"The pilot, who had flown with Bob Hope and others for film shots, asked me for details of any gem location. I put him on to Knoydart and he flipped over landing right at the working. He brought back a sack full of beryl which he came across in a concealed small dump. Out rolled this 9½ lb. crystal among the 'solid' stuff and I was able to buy it."

Editor's note: Loch is the Scotch for lake.

The Heart of Connecticut Gem and Mineral Show June 25 and 26, 1960

Many fine exhibits are being assembled, including the Austrian collection of one of our Middlesex County Club members, and one of America's foremost authorities on pegmatites will have a collection on display. There will be many cases of Connecticut specimens never before put on public exhibition.

Many of the area's well-known dealers will be at the show to greet you. The owner and editor of ROCK AND MINERALS, Mr. Peter Zodac, will also be on hand, occupying Booth No. 15, to renew old friendships and make new acquaintances. Members of several local clubs will be on hand to give information regarding mineral occurrences and their localities. A very large scale map with push-button lighting has been completed showing the locations of quarries and other mineral-collecting areas in the immediate vicinity.

The show committee plans to take this opportunity to hold a meeting of the New England club presidents. An attempt will be made at this time to find ways and means of exchanging information on mineral locations in the various club areas. Mr. Charles Wight, president of the New Haven Mineral Club, has graciously agreed to act as chairman. If club secretaries will communicate with the show committee, their presidents will receive complimentary tickets so that they may attend this meeting should they wish to do so. It will be held Sunday morning, June 26, at 10 o'clock. As many officers as possible are urged to attend.

A full and varied program has been planned for this event. The show will open at 10:00

A.M., Saturday, field trips will begin at 1:00 P.M., a lecture on crystallography will be given at 6:00 P.M. by one of our local authorities, and a movie be shown at 9:00 P.M. The show will close at 10:00 P.M. This program will be repeated both days of the show. Tickets will be good for both Saturday and Sunday at no additional charge. Everything possible is being done to make this show a most successful event.

Door prizes will be given, including subscriptions to ROCKS AND MINERALS, rock hammers and mineral specimens. A snack bar will be maintained on the first floor of the building, and will be open all hours of the show.

This area, "The Land of the Moodus Noises", has something to offer to everyone, since it is in the center of the Connecticut collecting area, and is also in the heart of the vacation resort area. Many fine resorts have promised to extend special rates on accommodations for those who attend the show.

Among the things offered are waterskiing, swimming, boating, fishing, tennis, archery, shuffleboard, ping-pong, dancing and other entertainment. These are being made available with the special prices. There is a wide price range for these accommodations that will fit everyone's budget. Those persons wishing accommodations please contact Mrs. Robert P. Gallant, Box 32, Moodus, Connecticut, and they will be sent a list of resorts and their prices. Anyone wishing these lists are advised to make early reservations, as the show is being held at the height of the season, and accommodations may not be available later on.

CURRENT EVENTS

of the EASTERN FEDERATION OF MINERALOGICAL AND LAPIDARY SOCIETIES

PRESIDENT

Sam Brown
40 Northview Ave.
Upper Montclair, N. J.

VICE-PRESIDENT

Mrs. James M. Dearborn
146 Lincoln St.
Newton Highlands 61, Mass.

TREASURER

Dr. George F. Size
Box 236
Murphy, N. C.

EDITOR

Mrs. Elsie Kane White
3418 Flannery Lane
Baltimore 7, Md.

SECRETARY

Roy E. Clark
Box 607
Newport News, Va.

EASTERN FEDERATION TENTH ANNIVERSARY SHOW

Committee reports made at two monthly progress-report meetings indicate that plans are well under way for another highly successful Eastern Federation Show and Convention in Asheville, N. C., August 4, 5, 6, 1960, according to Robert R. Williams, Jr., General Chairman. Southern Appalachian Mineral Society is again host for the second time.

With only a few exceptions committee chairmen are the same this year as for the 8th annual show which was so successful in Asheville in 1958. Gerald Medd, Arden, N. C., Commercial Exhibits Chairman, reports that response from dealers has been excellent and there will be more dealers than in 1958, and more diversified. Inquiries have been pouring in relative to the competitive displays by individuals and clubs, says William Whitehouse, 4 Waverly Court, Asheville, chairman of this division.

Special exhibits of specimens will include a number from foreign countries being arranged through various embassies in Washington, according to Robert Campbell, chairman, 38 Gladstone Road, Asheville.

The State of North Carolina will feature the show in all of its national publicity and advertising this spring and summer, says Fred Allen, Lincolnton, N. C., Publicity Chairman. The March 19 issue of the SATURDAY EVENING POST marked the first time rockhounding was used as an attraction in a full-color advertisement by the State of North Carolina.

An entirely new slate of field trips to

excellent localities already has been lined up by Harry Thomas, Arden, N. C., Field Trip Chairman. Following the Federation Field Trips will be the Spruce Pine Mineral and Gem Festival, thereby offering two shows in two weeks to those attending.

Inquiries for information should be directed to Box 1617, Asheville, N. C.

WHAT GOES WITH OUR CLUBS

The Alabama Mineral and Lapidary Society, of Birmingham, enjoyed talk on minerals from an area in Tallapoosa County by Mr. Arthur Dunning, illustrated by specimens, in January. Although the temperature was down to 19° on January 23, they ventured a field trip to Coffee Junction. Warmed up by many cups of coffee and a bonfire of railroad crossties, many specimens of iron minerals were collected. E. O. Dahlen spoke on Cutting the Cabochon in February. As tumble-polishing of the Brookwood gravels is gaining popularity among the members, some "surprise" material for use with this process was auctioned to aid the Slab Saw Fund. Houston Smith, of Montgomery, is the newly elected president. Mrs. Daisy Dunning, 2312 Avenue F Ensley, of Birmingham, is corresponding secretary.

Huntsville Gem and Mineral Society, of Alabama, met at the home of Major and Mrs. Richard Plumley, at Redstone Arsenal, in February, for a program on A Study of Rocks, Minerals and their Physical Characteristics.

The Gem and Lapidary Society of Washington, D. C., were to have Mrs.

George Czay as guest speaker in February, to show her wonderful pictures of Ceylon, Borneo, Saigon and other places in this general area. Club show case exhibit was to include stones from the Far East.

The Mineral Society of the District of Columbia's Annual Banquet, set for February 27th, had Dr. Fred Pough, lecturer, author and outstanding mineralogist, speaking on Famous European locations.

The Danbury Mineralogical Society, of Connecticut, elected two husband and wife teams as officers for this year. Carl Peterson was elected president and Mrs. Peterson, secretary. Emmett Close is vice president, with Mrs. Close, treasurer. Plans are under way for the annual mineral show held by the society every spring.

Gemcrafters of Miami, Florida, which will host the joint conventions of the National and Eastern Federations in 1961, is a young society (in its 3rd year) but reveals some of its accomplishments. "As our first group project we designed and constructed the jeweled crown which was awarded to the Queen of Gems who was chosen at the 1957 convention of the Eastern Federation . . . Our 'Princess', Miss Anita Marsh of Miami, was awarded both the title and the crown. One of our members won the first National Award Plaque for Faceted Gemstones at Denver and one of our junior members won the first National Junior Award in the same category at Portland, Oregon. Many awards and ribbons in both regional and national competition have been won by the Society itself and by others of its members. Another of our members is the donor of two of the annual awards given by the American Federation in national competition. One of our members has served the hobby as Executive Vice-President, Secretary and President of the Eastern Federation and as Regional Vice-President, Secretary and Vice-President of the American Federation. Gemcrafters of Miami made the FIRST and to date the LARGEST contribution (\$100) to the American Federation's Scholarship Foundation Fund. Gemcraft-

ers of Miami members believe that one GETS from a hobby in proportion to what one PUTS in and we are happy with what we get."

We can be justly proud of this energetic member of the Federation.

The Miami Mineral and Gem Society of Florida, plans to name a small group of from 5 to 10 members each month to show stones they have cut or any rocks and minerals acquired in the past year or so, to be displayed at the meeting in the club's case. Program for February was the showing of the Club's Rock and Mineral Collection. Howard S. McDaniel is the newly elected president, with Mrs. Pat Hogan, secretary.

The Georgia Mineral Society, Atlanta, after a "Brag and Swap Night" in February, had Dr. A. S. Furcron as featured speaker in March, his topic being the First 25 Years of the Georgia Mineral Society—its Past, Present and Future. The Gem Club had Mr. E. E. Joachim in February, talking on Identification of Gems by Sight, with An African Safari (armchair) conducted in March by member William E. Mitchell, illustrating his recent trip to Africa with his own pictures. Field trips included one in the area of LaGrange, to collect rutilated quartz, tourmalinated quartz and blue star quartz; another near Monticello for cab feldspars, with one planned in April to near Dallas for cubes and massive pyrite, and garnets galore.

The Pine Tree Gem and Mineral Association, of Maine, are busy with plans and report inquiries have been coming in since Christmas on their fourth annual Rockhound Roundup set for July 23 and 24, 1960, at the Swift River Valley District School. Philo Hodsdon, Frye, (Rumford 923-W4) is general chairman and will handle dealers' and swappers' space. Mrs. Elsie Moore, also of Frye, will supply information on tenting areas, hotel and motel accommodations. Mrs. Freda Thomas, of Roxbury, is in charge of special exhibits, with George Dubois seeing about the catering service and Dean Macrellis supplying signs. A new feature of the Roundup will be a mineral

auction, being planned by Ethelyn Perry of Mexico, Me. Field trips and gold panning are in the capable hands of the Clifford Trebilcock family of Topsham. They hope to see YOU at the Roundup!

The Gem Cutters Guild, of Baltimore, Md., in addition to planning its tenth anniversary celebration, heard an excellent talk on Pegmatites, their formations and locations, by Dr. Hobson of Johns Hopkins University in March. As the first field trip of the season planned for the first day of spring was snowed under by a foot of those beautiful, white crystals, its visit to an old abandoned lead mine in Frederick County for galena was postponed until April. Red and white marble found in this area makes lovely cabs.

The Boston Mineral Club, of Massachusetts, held two meetings in February and March. Dr. Joseph Murdoch of the University of California spoke at the first on Pegmatites. Kodachrome slides of outstanding mineral specimens from famous western collections were shown for the second, with Mrs. James Marshall Dearborn narrating. Rev. Dr. James Skehan, S. J., professor of Mineralogy and Geology at Boston College, spoke on A Geological and Mineralogical Round Trip to Montana in March. Mr. Alden B. Carpenter, graduate student, working for his PhD at Harvard, was scheduled for the second meeting, with possibly Peter Nalle, Superintendent of Mining at the Crestmore Quarry, of California, to speak on the Crestmore Quarry.

The Westminster Mineral Club, of Massachusetts, held its annual meeting and fifth birthday party at the clubhouse at Minott Road on February 25th. Highlights of the year included receiving its charter as a member of the Eastern Federation, and attending its convention in Boston. During the year it was entertained by the Keene, N. H. Mineral Club and the Worcester, Mass. Mineral Club. It was host to the Keene Club in March for the excellent program of slides on Crystallography and Micromounts borrowed from the Baltimore Mineral So-

ciety. In September it was host to the Worcester club for a program on Gems and Birthstones, illustrated with jewelry and cut stones borrowed from members.

Eight field trips were made during the past season, two of these joint trips with the Keene and Antrim Area clubs of New Hampshire. The following areas were visited: Rollstone Hill Quarry in Fitchburg, Mass.; Mt. Grace in Warwick, Mass., where beautiful specimens of black radiated tourmaline were found; Wilmott, N. H., at the Weatherbee Prospect for pegmatite minerals, and the Globe Mine for "snowflake quartz."

Over Memorial Day weekend a field trip was enjoyed to the Oxford County area in Maine, including Bumpus Quarry, Noyes Mt., Mt. Mica, the Rubellite mine in Hebron, the Hibbs mine, and Mt. Apatite. Several members attended the Maine Round-up in July, and in September another return visit was made to the Wise Fluorite Mine in Westmoreland, N. H. President Joseph Mattson attended the third Annual Mineral Exhibit in Franklin, N. J. In September a trip to Cheapside Quarry in Greenfield, Mass. produced some specimens typical of trap rock quarries, and the last trip of the year was made in the rain and cold to the Bolton, Mass. location for scapolite, and the resulting case of poison ivy helped make these members content with working on collections at home until good weather comes again.

Many mineral specimens were received as gifts, and some purchased, to fill the new shelves constructed at the clubhouse. As the minerals were purchased they were also studied, and with the addition of mineral games and special programs, such as the talk on fluorescents, ably given by Mrs. Ethel Cook from Leicester and beautifully illustrated from her collection, the club has increased its knowledge and experience. Guests are always welcome. Meetings are held the fourth Thursday of each month.

Monmouth Mineral and Gem Club, of New Jersey, had fifty members visit the American Museum of Natural History,

New York City, on February 28th, travelling by chartered bus. With weather too inclement for collecting, this was a pleasant "field trip." Films of "Bauxite Mining in Jamaica" and "Aluminum on the March" were shown at the February meeting. Ronald J. Scudder of the New Jersey Bureau of Geology and Topography was scheduled to speak at the March meeting. His subject was Geology of New Jersey and New Jersey Mineral Deposits. The club meets the second Thursday of the month at the Youth Center in Fair Haven. Visitors are welcome.

The Newark Mineralogical Society of New Jersey had an illustrated lecture by Clifford Anthes, an avid photographer, and vice-president of the society, highlight its 360th meeting on February 7. Using as his subject Rock Ramblings through the East, he showed pictures of field trips, slides of some of the outstanding minerals in the Harvard Museum Collection and exhibits at the Eastern Federation meeting in Boston last July. The competition for the best display in orange and red minerals was won by the club secretary, William H. Clinton. Ninety-five members and guests attended. Mr. E. F. Pratt of Upsala College was to talk on Sedimentary Rocks, Their Story and Formation, in March. Peter Kondrosky, an authority on coal mines, was scheduled for April, his topic, Visit a Coal Mine.

The North Jersey Mineralogical Society, of Paterson, had Professor Ralph Holmes, Columbia University, speak on The Mining and Fashioning of Turquoise and other Arts and Crafts of Iran (Persia) in February. The monthly display was of Phosphate minerals—turquoise, etc. Paul Seel, of Bala-cynwyd, Pa., was to speak in March on Observations on Diamond Crystals, with a display on diamonds, genuine and imitation.

Geological Section, Buffalo Society of Natural Sciences, of New York, had a program of geology films in March, in addition to setting up and previewing its annual exhibit for the Geological Sec-

tion at the Museum. Door prize for February, an azurite specimen from the Dixie Apex Mine of Washington County, Utah, was won by Paul Mohr. Door prize for March was an andradite garnet from Graham County, Arizona, and for April, kyanite from Minas Gerais, Brazil. Fluorescence in Minerals was the topic for the April meeting, with member Clifford J. Awald, Research Associate in Geology at the Museum, presenting the program.

The Fulton County Mineral Club, of New York, for its first meeting in February had a general bragging night, with members bringing best specimens for display, and the program included demonstrations of mounting for its second meeting by members Owen Parsons, Fred Breuch, Jo Van Tassel and Lewis Valachovic. This society has started a circulation library, with Mrs. Shirley Parsons, librarian. Open House was held for the first meeting in March, with 22 members and 12 guests present. The speaker was Robert J. Rourke of Schenectady, who brought a collection which included several trays of most unusual and beautiful world-wide specimens. Some minerals were extremely rare in that the mines from which they were obtained in the 1890s are no longer open. Following the viewing, Owen Parsons showed interesting slides of a trip made to the Maritime Provinces in Canada.

The Nassau Mineral Club, of Long Island, had Ted Fredericks of A & T Mineral Service in March speak about the chemistry of sulphates and their locations which are available to the average New Yorker. Frank Lewis, an authority on mineralogy, has started the beginners on a chemistry course which is a pre-requisite to a course this coming fall in which he will lecture on mineralogy. On the first Monday of each month at the Mincola Memorial Library, the club presents a guest speaker and displays one different mineral or rock at each meeting. All interested persons are welcome to come to the meetings.



Capital District Mineral Club, Incorporated, of Albany, N. Y. Elects New President.

Retiring president Chester E. Hunziker (left) Schenectady, N. Y., congratulates president-elect Daniel C. Libeg, of Broadalbin, N. Y. The Capital District Mineral Club is unique in being the only amateur mineral club in New York State granted a provisional charter by the Board of Regents of the University of the State of New York as an educational corporation.

The Capital District Mineral Club, of Albany, N. Y., whose activities include the cutting and polishing of gem materials, as well as all phases of mineralogy, installed Daniel C. Libeg as this year's president at the February meeting, held in the Museum at the State Education Building. Officers who will assist include Ralph Geiser, of Troy, vice-president; Miss Pauline McGonigal, of Troy, secretary, and Mrs. Olga Pohl, of Albany, treasurer. This society has an area registration of approximately 100 members.

The Lapidary and Gem Society of New York, at its February 10th meeting, saw a film "Grits that Grind" by the Norton Co., showing how their abrasives and grinding wheels are manufactured. The members were greatly impressed by the care and attention to accuracy involved in the process. Afterwards Mr. Lee Anderson of the Norton Co. spoke about

tumbling. At the February 24th meeting the members saw demonstrations and heard a talk by Walter Stone and Martin Walter on a new material used to carry polishing and abrasive powders. With the help of the material manufactured by Pellon Corporation astounding results and savings in time are achieved, particularly in the polishing of flats and facets.

The New York Mineralogical Society, New York City, recently heard Dr. A. Krehmeller of Sylvania Research Laboratories on the subject of synthetic crystallization. Many theories of crystal growing were discussed first, crystal growth was shown to take place in a spiral pattern, and this was well shown by pictures of it occurring on the surface of carborundum crystals. Growth methods were discussed next and they were both wet and dry. The dry methods consisted of Verneuil's method used considerably in

preparing synthetic gems, the drawing method which consists of withdrawing a seed crystal from a molten bath of the substance and used for the manufacture of germanium xls for transistors, and the vapor method in which the substance is vaporized in an inert gas and then allowed to cool thus forming xls. The wet methods consisting of immersing the parent substance in a solvent and allowing factors of heat and pressure to dissolve the substance more readily and prepare it for crystallization. A rising vote of thanks was given for this very interesting talk.

At a subsequent meeting, Capt. John Sinkankas, U.S.N., took the members on a trip to Southern California by way of slides and showed the regions long famous for their gems. San Diego County has many pegmatites. He also received a rising vote of thanks for his fine talk. A minute of silence was observed at this meeting in honor of the memory of Tommy Lisle, a member who died. He was an active member for many years and wrote many articles on various mineral subjects for many mineral magazines.

The Rockland County Mineral and Gem Society, of New York, heard Mr. A. W. Rittershausen, principal of Nyack High School and club member, discuss his favorite subject, *The Story of Zinc*, in February, showing two films, first the *Gismo*, showing the working of automatic mining machinery at the Mascot Mine, made by the American Zinc Lead and Smelting Company, and second, *Die-Casting*, put out by the American Zinc Institute. In March, Mr. Joseph Kuchar spoke on *Minerals of the World*, showing special mineral samples obtained during his world travels.

The Mineralogical Society, of Pennsylvania, had 81 members and guests attend the monthly Field Trip on March 13, which was held in the D. V. O. C. Ornithological Room of the Academy of Natural Sciences in Philadelphia. Mr. Harold Arndt gave a lecture, illustrated by color slides, about some of his adventures and findings while mineral collecting in New York State and Southern

Ontario. On April 2, an extra field trip was scheduled, by bus, to cover the Paleozoic Section of the Lehigh River Valley, leaving Bethlehem about 8:30 A.M. and returning about 5 P.M. The first regular outdoor trip for 1960 was set for April 30, to the Kibblehouse Quarry in Perkiomenville, Pa., terminating in time for members to attend the society's annual banquet at the Spring Mountain House in Schwenksville.

Dr. James R. Beerbower, Associate Professor of Geology at Lafayette College, was announced as the guest speaker. Several films were also scheduled for this event.

The Mineral and Lapidary Society, of Pittsburgh, Pa., had a member, George Winslow, show his beautiful color slides and talk on his *Western Travels* at its February meeting. Two new members, "Babe" and Ann Smedley, were scheduled to talk about the Canal Zone and its Rocks, showing color slides of rock hunting there, a rock show and the Panama Canal, having just returned from a 3-year tour of duty with the Army. Two junior members received congratulations: Don Thompson, who won first and second prize at the Tarentum High School Science Fair, first for his work on wasps and second for Luminous Minerals, which he collected in New Jersey and North Carolina. Marene Popovich was a prize winner in the Leechburg High School Science Fair. Both were also exhibiting in the School Science Fair at the Buhl Planetarium from April 9 to May 8.

Western South Carolina Gem and Mineral Society, of Greenville, had James A. Johnson speak on *Steps in Faceting* at its February meeting. Mr. H. G. McCartt gave a talk on *Tumble-Polishing* in January, explaining not only the process, but told how he made his own tumbler, which he displayed. Mr. Jimmie Durham, assisted by his father, W. L. Durham, was scheduled for March meeting, subject to be *Silvercraft* and the *Setting of Cabochons*. Field trip in lieu of an outdoor trip for March was a visit to the University of South Carolina Museum of

Geology, tour of the museum conducted by Dr. L. L. Smith, head of the Geology Department.

The Gem and Mineral Society of the Virginia Peninsula, of Hampton, planned a series of colored slides for March, showing the characteristics of the gemstones the rockhound is most likely to find, with talk on identifying and cutting them. The Pebble Pups, junior group

of this society, had a talk on tumbling stones by Mac Israel of the senior club, including the how and why and what to tumble, and how to make own equipment.

(All Federation club news should be sent direct to Current Events Editor, Mrs. Elsie Kane White, 3418 Flannery Lane, Baltimore 7, Md. WIndsor 4-1008.)

EASTERN FEDERATION HISTORY

(Continued from March-April Issue)

FLORENCE C. HIGHT, Historian

In 1955 the Eighth Annual Convention of the American Federation of Mineralogical Societies was held in September at Washington, D. C., at the Shoreham Hotel in joint meeting with the Eastern Federation.

The host societies were: Mineralogical Society of the District of Columbia, Lapidary Club of Washington, D. C., and Gem Cutters Guild of Baltimore, Md.

At a meeting of the Board of Directors of A.F.M.S., Mr. H. L. Woodruff was elected Vice-President. St. Paul, Minn., was voted as the next convention city.

The Fifth Regional Convention of the Eastern Federation was host to the A.F. M.S. At its annual business meeting Mr. James H. Benn and Mr. Arthur J. Campbell were elected as delegates to the A.F.M.S.

The next convention city for the Sixth Annual Convention was not chosen at this time, although Baltimore was mentioned.

Pending the choice of the convention city, no Ex-Vice-President was elected.

Officers were elected as follows: James H. Benn, President; Arthur J. Campbell, Vice-President; Henry Graves, Secretary; Louis E. Shaw, Treasurer; Miss Florence Hight, Historian.

Details of the convention follow: The Shoreham Hotel, scene of the Fifth Eastern Convention of Federated Mineralogical and Lapidary Societies, is one of

the fine hotels of the country. It is on the rim of the city of Washington, between the zoo section of Rock Creek Park and the imposing Washington Cathedral. It is spacious and has beautifully landscaped terraces with a very spectacular fountain which changes to several different forms. At night this is lighted by lights that give the fountains a jewel-like color, which changes every few seconds.

At the west end of the hotel is a wide marble lobby. Here were the Registration and Information desks for the convention.

A very wide marble stairway led down to the main ballroom where the dealers' booths were. On the first landing as you go down the stairs you find the fluorescent minerals and ultra violet products room on the right, and a movie hall or illustrated lecture room on the left. As you continue down, the second landing overlooks a large well-lighted ballroom, now an exhibit and sales hall. You are conscious of many flashing colors and people but you forget all about them as your attention centers on a big tiered turn-table of multicolored spheres.

These beautiful polished balls are from 2" to 13" in diameter of various colors and minerals. The table height shelf was about 5 feet across the center, the second tier about 3½ feet and the top tier 2 feet. They were kept turning by a quiet running motor.

Mr. Mathieu, an engineer from Rialto, Calif., designed and built the Mathieu Sphere Machine which has five sets of cups and will cut up to 8" spheres. Most of the spheres were the work of Mrs. Mathieu, a very attractive woman, originally from Maine. Their largest sphere, a 13" one, weighs 115 lbs. They had to rebuild their machine after that one. That, and several 10 and 12 inch ones, were mounted on separate pedestals. The Mathieus brought 1700 pounds of spheres from California for the display and it was fascinating to gaze upon.

It is impossible to describe the stock of the thirty-two or more dealers who came from all over the country. While there was some material for a few cents, most of the stock was higher priced than formerly, but on the whole it was of better grade and some were very rare specimens.

The Rainbow Rock Shop from Nevada had one of the highlights of the gem show. An opal—said to be the world's largest specimen of precious opal. It is a six and a quarter pound cylinder-shaped specimen flowing with reds, greens and gold. The owners also had several 2½" sparkling pieces turning in the light.

The item that received the most news-

paper space was the carved sapphire bust of President Eisenhower. This was carved from the largest known black star-sapphire in the world and was unveiled at the opening of the convention by Secretary of the Navy, Charles S. Thomas. It was valued at \$250,000 and was constantly guarded by an armed guard.

This is the third of a series of Presidents carved from sapphire by Harry B. Derian for Kazanjian Brothers, Los Angeles importers and diamond cutters. The Lincoln head in dark blue sapphire was at our Second Federation Convention at Newark, N. J. in 1952. This Eisenhower bust is 2½" tall, 2½" wide and 2¼" deep. It is displayed in a box with a mirror set so that the star in the base is clearly visible to observers. This is the only concave cabochon known in gem cutting.

Eventually four carved black star sapphires, which represent a million dollar collection, will be given to the Smithsonian Institute by James M. and Harry G. Kazanjian—two grateful Armenian immigrants who came from Europe in 1913. A gesture of gratitude for all America has meant to them.

(Continued in next issue)

ATTENTION SUBSCRIBERS!

For some unexplained reasons a few copies of each issue of *R&M* fail to reach subscribers on time. Considering the many thousands of copies mailed each issue, a few are apt to go astray but eventually will turn up.

Around the 15th of last month we received at least 10 complaints from subscribers who wrote:

"I saw the March-April (1960) issue at a friend's home. Why hasn't my copy arrived?"

You know something! That issue was not released by the Printers until March 19th—the issue was mailed March 25th. What the subscriber apparently saw was the March-April 1959 or 1958 issue. Subscribers, please be patient. Your copy will arrive in due time.

July-Aug. 1960 issue will be out about July 20th.

Club and Society Notes

Attention Secretaries—Please submit neat copies. Give dates and places of meetings. Check names for correct spelling.

EAST

CONNECTICUT VALLEY MINERAL CLUB

Our speaker at our January 6, 1960, meeting at the Springfield, Mass. Museum of Natural History was Dr. Allen E. Andersen of the faculty of the University of Mass., and our club President. His subject "Erosion Patterns in the Colorado River Drainage Basin" was very colorfully illustrated with slides depicting the beautiful rock formations in various shades of sunset hues, with an interesting description of the geology of Colorado, Arizona, and Utah.

During January our club suffered a great loss in the death of a charter member, Mr. Charles Hull of Agawam, Mass. Though eighty-three years of age, Mr. Hull was an active collector through the past season.

At the February 3 meeting a nominating committee was appointed, consisting of Albert Sebela, Earle Thornton, and Otto Bartels. The speaker of the evening was Dr. Benjamin M. Shaub, Associate Professor Emeritus, Smith College, a charter member of the club, and past president. His subject was "Three Days with Black Bears, Mud Pots, and Geysers of Yellowstone", with all phases colorfully illustrated with Kodachrome Slides and interesting descriptions. A social hour with refreshments followed the meeting.

Kenneth Holt, Sec'y
82 Larchmont St.
Springfield, Mass.
February 27, 1960

Westchester County N. Y. Unit of the Franklin Mineralogical Society

A new club has been formed in lower Westchester County, N. Y., which is a unit of the Franklin Mineralogical Society. The club meets at the homes of members and the secretary, pro-tem, is Mrs. Ludwig Hartmann, 11 Jefferson Place, Tuckahoe 7, N. Y. All readers residing in the area are invited to join the club.

TEXAS

Central Texas Gem & Mineral Society

The new officers of the Central Texas Gem & Mineral Society are as follows:

Pres. Dr. A. C. Andrus, Box 112, Anson, Texas.

Vice-president Mr. Eric Matthews, 2118 N. Fifth St., Abilene, Texas

Secy-Treas. Mr. L. T. Reed, 1226 N. Sixteenth St., Abilene, Texas

During the past year the club sponsored three field trips. The first—The Blue-bonnet trip covered parts of Llano and Mason counties in April. This was both a rock-hunters and a photographers dream. The second was in November to the Big Bend and the Sierra Aguja for Agate. The last to Katemcy, Mason County for Smoky Quartz, Topaz, and artifacts.

The club is starting the new year with over fifty members and plans several interesting field trips to new locations.

Erwin H. Buch
P.O. Box 881
Abilene, Texas

NEBRASKA

CHIMNEY ROCK STONE AGE FAIR

A 3-day mineral show was held March 11-13, 1960, in Bayard, Nebr., in the American Legion Hall. An estimated 6,000 viewed and admired the 40 entries exhibited by members and dealers. The show, titled Chimney Rock Stone Age Fair, was the 3rd Annual Event and it is the mecca for amateur geologists and mineralogists in Western Nebraska. Ken Fowler, of Bayard, was the Show Chairman.

WYOMING

Rawlins Rockhound Mineral and Gem Club

At the March 8, 1960 meeting of the club, the guest speaker was La Von Satterfield of Carter Oil Company who gave an interesting talk and showed charts on seismograph oil exploration.

Phoebe Cross, Corr. Sec.
608 Davis St.
Rawlins, Wyo.

ARIZONA

ARIZONA MINERALOGICAL SOCIETY

The meeting of January 22nd, 1960, was of an educational nature and Bill Reed, Sue Cummings and Katy Trapnell gave some suggestions on trimming, cleaning and displaying minerals.

The most pertinent idea offered for breaking your rocks is to use a vise and apply gradually increased pressure. Then trim off excess with nippers. The blow from a rock pick can pop off the crystals you are trying to save.

There are many fine articles recommending ways of cleaning up specimens, but *detergent* and water are frequently all that is needed. Soap leaves a cloudy film, but any household detergent will make the rocks sparkle—*unless* they are soluble in water. Household bleach, carbon-tet, and in some cases acid are prescribed, but one should be familiar with the minerals and the action of these materials on them.

Displaying minerals in a show or in your own home is "window dressing" and one can take a hint from the department stores: Call attention to your merchandise, but do not overwhelm it with background material, extraneous objects or conspicuous and unattractive colors. Soft drapery and pleasing color combinations will enhance the beauty of minerals. A dash of imagination and a definite plan in mind will make even a brickbat an interesting exhibit.

WHAT TO DO IF

If your wife (or husband) becomes lost while out on a rock hunting expedition, there are two possible solutions based, of course, on your own particular situation: If you love her, go and hunt for her; if you don't love her, just get in your car and steal quietly away.

This advice was offered in answer to otherwise serious questions posed to a panel of doctors discussing the problems of health and safety on field trips. Dr. G. G. McKhann, heart specialist and chairman, Dr. Donald Sider, orthopedic surgeon, and Dr. Wm. E. Ragsdale of Phoenix, Arizona presented a comprehensive outline of dangers which might be encountered on field trips, methods of prevention of accidents, and first aid as the last resort should accidents occur.

Emphasis was placed in always carrying a survival kit. In it should be included: Water (2 gallons per person), food, warm clothing, blankets, matches (waterproofed), can opener, axe, compass, knife, and bouillon cubes. The latter was advised after a discussion of the practicality of taking salt tablets. It was agreed that salt could be more upsetting than valuable if taken in a pure form. Furthermore, other salts, vitamins, and minerals besides

NaCl should be replaced when lost from the body through profuse perspiration.

In addition to the usual first aid precautions there were several which pertained particularly to groups of rockhounds or seemed exceptionally adaptable to the western country.

1. To keep in touch with others carry a whistle. (Never travel alone).
2. Tie a colored rag to the tip of the aerial or fishing rod attached to your car to spot it more readily in mountainous country.
3. Learn edible desert plants for emergency use.
4. Never enter a mine tunnel except with someone who is connected with that particular mine.
5. Do not drink mine water even if artificially purified. It may contain poisonous minerals.
6. Stove pipe leggings are fool proof in snake infested areas. Leather boots or leggings offer much protection.
7. Tetanus toxoid is a preventive and gives less trouble allergy-wise.
8. Salt fruit juices slightly to provide extra salt needed in system.
9. Discard old tools—mushroomed chisels or old hammers may result in flying steel splinters of detriment to anyone within striking distance.
10. Wear goggles to protect eyes when wielding a rock hammer.
11. Include ethyl chloride in first aid kit for treatment of snake bite or scorpion sting.

Valuable publications relating to the foregoing subject include Dr. Stahnke's "Poisonous Desert Dwellers"; "What's the Answer?", put out by the Maricopa County Medical Association; and "Desert Survival" (Basic information for anyone traveling in the Sonoran Desert) obtainable through the Maricopa County—City of Phoenix Civil Defense Joint Council, Phoenix, Ariz.

The general conclusion of the group was that it is far better to avoid hazardous situations through knowledge of terrain, dangers possible, and practical caution. (Written by Sue Cummings)

Mrs. J. N. Salvino, Corr. Sec'y
1447 E. San Juan
Phoenix, Ariz.

CALIFORNIA

San Francisco Gem & Mineral Society, Inc.

May we submit our 1960 show dates for listing in your Coming Events Column?

October 29-30, 1960. The Silver Anniversary of the San Francisco Gem & Mineral Society, Inc., at the Scottish Rite Auditorium, Van Ness and Sutter Street, San Francisco, Calif.

Our grandfather clock whose entire working mechanism is of jade, fashioned by lapidary artists of this Society, will be exhibited again.

There will be an admission charge of 50¢ this year. Our sincere thanks to R&M for its splendid cooperation and friendliness through the years.

Mrs. Carol Reinecke, Corr. Sec'y.
4134 Judah St.
San Francisco 22, Calif.

ALASKA

Chugach Gem and Mineral Society (Alaska)

A new club has recently been formed in

Alaska, the Chugach Gem and Mineral Society. The club name "Chugach" is taken from the nearest mountain range. Club members are residents of Elmendorf Air Force Base, Fort Richardson Army Post, and the city of Anchorage, Alaska.

Meetings are held on the 2nd Wednesday of every month on the Elmendorf Air Force Base at the Northern Lights Service Club, 7:30 P.M.

Mrs. Stanley A. Long
Box 100 C.O.C.
5008th Support Sq.
APO 942 Seattle, Wash.



ROCKS AND MINERALS ASSOCIATION



Friends: I am happy to report that the identification service seems to be a popular item. I have been receiving many packages of minerals for identification which has been keeping me busy and has made these past winter months more interesting and educational. From your letters it is evident that this service is appreciated and we are glad to have this opportunity to be of service.

Requests for membership cards have been coming in at a steady pace and there will be more shoulder patches and car emblems displayed this season, judging from the orders for them last winter. More and more people are becoming acquainted with the Rocks and Minerals Association each year.

Have you ever considered contacting your local school to see if they could put some of your excess specimens to good use? Many of our members have done this and have also given talks on minerals to the school children.

From correspondence with our members and from personal experience, I know that there is a great deal of per-

sonal satisfaction in contributing to the education of our children, the school staff, invariably are appreciative and encouraged by this outside help and interest in their activities. In many cases, this is the only way a school could build a collection which will create an interest in minerals with the children. You and I know that an interest in minerals is a healthy interest and I do not believe that there is a parent that would not approve and encourage such an interest, especially in these days when so many are concerned with the activities, interests and future of our youngsters.

Think about it and if you can and do decide to offer your help in any way, I know that you will never have cause to regret it. Helping each other is a great source of satisfaction and could be practiced much more in these hectic days of rush, hurry and worry. Someone once said that life was something that we were all just passing through, let's take a little time out to enjoy our trip.

Happy hunting,

Don Presher

Publications Recently Received

Dunbar—Historical Geology (2nd Edition).

By Carl O. Dunbar, Professor Emeritus of Paleontology and Stratigraphy, Yale University, 500 pp., 406 figs. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. —Price \$7.95.

Historical Geology illuminates the history of the Earth from its cosmic origin to the present, with a special regard for the progressive evolution of life. This edition has been substantially rewritten to include the new advances in geochronology, the cosmic history of the earth, and the new discoveries in vertebrate paleontology and in human paleontology.

It is presented in the form of a series of essays that will stimulate interest and imagination—factors that the author considers essential to understanding. The element of interest has also determined the amount of discussion given various eras—Precambrian history is confined to a single chapter, but the Cenozoic Era, and the history of the mammals and the coming of man, are treated in far greater detail.

Principles of interpretation are given particular emphasis in order to convey how a geologist thinks; all generalizations made are supported by specific evidence. Over one-fourth of the illustrations are entirely new—the many excellent pictures and stratigraphic diagrams have been selected on the basis of their value as substitutes for experience in the field.

Dobrin—Introduction to Geophysical Prospecting. (2nd Edition).

By Milton B. Dobrin, Triad Oil Co. Ltd., 446 pp., illus. with photos and figs. Published by McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, N. Y. —Price \$9.50.

This completely revised second edition presents the principles and current techniques of geophysical prospecting for oil and minerals. The book covers all the major methods of geophysical prospecting, and for each method discusses fundamental physical principles, instruments, field techniques, reduction of data, interpretation, and examples showing results of actual surveys.

Important new material for the practicing geologist and geophysicist has been added to this edition. A unique chapter on coordination between geology and geophysics stresses the practical techniques by which geological information is applied to the interpretation of geophysical data, particularly seismic reflection records.

Namowitz & Stone—Earth Science (2nd Edition).

By Samuel N. Namowitz, Principal, E. D. Clark Jr. High School, New York City and Donald B. Stone, Chairman, Science Department, Mt. Pleasant High School, Schenectady, N. Y., 614 pp., illus. with many photos and figures. Published by D. Van Nostrand Company, Inc., 120 Alexander St., Princeton, N.J. —Price \$5.20.

The revised Edition of Earth Science—The World We Live In preserves the basic approach and familiar style of the first edition but differs from it in many important and significant respects.

First and foremost, the new edition incorporates the results of the most recent research in the fields covered by the text. Much, but not all, of this material represents findings of the International Geophysical Year. This new material has been distributed throughout the text in appropriate places where it modernizes the discussion. Among the topics that have been brought up to date in this manner are the climate and topography of Antarctica, the countercurrents and deep water circulation of the ocean, magnetic storms, sunspots, auroras, mineral wealth in the ocean, jet streams and radiation bands in the atmosphere, the topography of the ocean floor, and the composition of the earth's interior.

Second, in the unit on the The Earth and Its Land Forms, the chapter on rocks and rock-making minerals has been considerably expanded, and an entirely new chapter, Minerals of Economic Importance, has been added. An 8-pages four-color insert shows over 180 important minerals, and as an aid to "rock-hounds," a specially prepared appendix lists the major physical properties of these minerals and others mentioned in the text. The chapter on Reading Topographic Maps has been amplified to provide the student with greater insight into the use of this invaluable tool of the earth scientist.

Dunning & Peplow, Jr.—Rock to Riches

By Charles H. Dunning with Edward H. Peplow, Jr., 406 pp., illus. with photos and drawings. Published by Southwest Publishing Co., Inc., 817 W. Madison St., Phoenix, Ariz. —Price \$8.75.

Rock to Riches, the story of Arizona mines and mining, is a fascinating book recently released by Southwest Publishing Co., of Phoenix, Ariz. It is written by Charles H. Dunning, with Edward H. Peplow, Jr. into its 410 pages, the authors have packed not only

detailed histories of the great mines of the nation's number one producer of non-ferrous metals; they have included also informed analysis of the political, social, economic and technological factors which have determined the course of American mining in each of ten periods from prehistoric times to the present.

Alvin W. Knoerr, editor of "Engineering & Mining Journal", widely respected mining publication, said of *Rock to Riches*, "The book presents a nice balance of the technical aspects of mining; mining's heroic contribution to the industrial age; and the romance, humor, drama and adventure interwoven in the story of the birth and growth of the American mining industry."

While *Rock to Riches* is essentially a serious book addressed to a broad audience, the authors wisely have laced it liberally with human-interest anecdotes drawn from the wealth of experience Mr. Dunning gained during more than half a century as a respected mining engineer in Arizona. Humor creeps in frequently, often in the most unexpected places, and occasionally the humor is of the slightly robust kind typical of miners of yesteryear.

Sanborn-Crystal & Mineral Collecting.

By William B. Sanborn, 145 pp., 89 figs. Published by Lane Book Company, Menlo Park, Calif. —Price \$3.50.

Here is a book for the mineral collector. Its author, Dr. William B. Sanborn, is a well known west coast teacher and lecturer on mineralogical subjects; he is Director of The Bureau of Instructional Materials, San Francisco Unified School District. Dr. Sanborn, has tramped and roamed over many thousands of miles of desert, canyon, mountain and other areas searching for specimens, taking photos, making notes, drawing sketches, etc. With this varied and valuable background, his book is bound to be intensely interesting and we recommend it highly to mineral collectors.

Davis — The Chemical Elements (revised edition)

By Helen Miles Davis (revisions by Glenn T. Seaborg, Nobelist in chemistry), 204 pp. Published by Science Service, Washington, & Ballantine Books, New York. Send orders to Science Service, 1719 N. St., N. W., Washington 6, D.C. —Price 55¢.

This is the thrilling story of man's discovery of the building blocks of the physical universe.

The Chemical Elements are the fundamental stuff of all creation.

This is the authoritative story of their discovery and all that is known of their construction, so simply told that anyone may understand it.

The fascinating array of the building blocks of matter is fully covered, from H for hydro-spread throughout Europe.

gen to those elements discovered in the atomic era, numbered 93 to 102. And the story of each element, its properties, sources, the most important varieties (isotopes), characteristic compounds, and place in periodic tables appears here in a clear and readily understandable form.

Completely up-to-date, fully indexed, invaluable for reference, this is an essential, and highly readable, handbook for every student, teacher and professional chemist.

Gilbert—De Magnete

By William Gilbert (Translated by P. Fleury Mottelay, 368 pp., many figures. Published by Dover Publications, Inc., 180 Varick St., New York 14, N. Y. —Price \$2.00.

William Gilbert, the Author, was a physician at the court of Elizabeth I. Most historians, in describing the glories of the Elizabethan Era, might mention that the Queen's physician was a rather versatile fellow who wrote a book on magnetism. In the long run, however, William Gilbert may have had a greater influence on history than Elizabeth herself.

De Magnete was the foundation for the next two hundred and fifty years of discovery in the fields of electricity and magnetism. It marked the beginning of modern scientific method, and it demolished superstitions that had lingered since the Dark Ages.

Gilbert's explanation of magnetism was so thorough that it encompassed nearly everything known about the subject up to the Nineteenth Century. His illustrations and diagrams of lodestones, compasses, lines of force, terrestrial magnetism and other phenomena are as fresh and clear as his language.

Singer—From Magic to Science

By Dr. Charles Singer, 253 pp., 109 figs. Published by Dover Publications, Inc., 180 Varick St., New York 14, N. Y. —Price \$2.00.

At the height of their empire, the Romans had a series of military hospitals so well-designed that Europe did not equal them again for a thousand years. Their public health service, which maintained a number of physicians in each town according to its population, probably provided more medical care than is available to half the people in the world today.

With the disintegration of the Roman Empire, however, the meagre scientific knowledge of the ancients gave way to superstition and magical belief. The decline and rebirth of European science is told in *From Magic to Science* by Dr. Charles Singer.

In this profusely illustrated book, Singer describes the lore of the Middle Ages and tells how European science was reawakened through contact with Arab and Jewish scholarship. From such influential institutions as the medical school of Salerno, the new learning

MAINE MINERAL COLLECTING

The Maine Department of Economic Development, Augusta, Maine, has released a new booklet, "Maine Mineral Collecting," according to an announcement made by Robert Doyle, Director of the Geological Survey Division. It's a little "big-helper" designed with the "rock hound" in mind. It's free.

The booklet is a descriptive guide to Maine gemstone and mineral localities. Within its pages will be found a description of the more common minerals and gems that can be found easily; facts about the rocks that are searched for the most in Maine. The booklet states, "In Maine, they search for gold and such semi-precious gemstones as beryl, garnet, topaz and tourmaline. They find them, too!" It contains, also, descriptions of the minerals and semi-precious stones and locality maps of several of the localities where good collecting has been reported; who to contact in these areas . . . name and address of land or mine owners where prospecting permission is available; simple equipment the "rock hound" should know about to help make his venture more enjoyable.

Gold panning, in the State of Maine, has been growing by "leaps and bounds." This

booklet covers the subject quite thoroughly. It explains how "gold panning" has become a family project. It tells you what to take and where to go. One spot is especially mentioned for the "rock hound" to visit because amateurs have consistently panned gold there, year after year. Many other areas are also included.

This illustrated, interestingly written booklet is a word-picture "timetable" designed to assist the "rock hound", who visits the State of Maine, in realizing his dream of "bringing home the yellow stuff" and having fun doing it.

DEALERS CATALOGS

Minerals Unlimited, 1724 University Ave., Berkeley 3, Calif., have issued an 8 page price list featuring fine mineral specimens, chiefly new arrivals. This firm is continually adding new arrivals to its large stock of choice mineral specimens from all over the world.

NOTE ON CLIPPINGS!

If clippings from newspapers are sent us, please give the paper's name and date of issue so that if reprinted, R&M can give full credit to the paper from which the clipping is taken.

PICKENS MINERAL POST CARD DEPARTMENT

Reo N. Pickens, Jr., 610 N. Martin, Waukegan, Ill., one of our good advertisers, is a photographer whose hobby is mineral collecting. For over a year we have been receiving from Mr. Pickens post cards of minerals in color which he himself had taken. These mineral post cards are so beautiful, and with new ones coming out every month, that we have decided they deserve a spot all their own in R&M and so Pickens Mineral Post Card Department is set aside for them.

Five new post cards recently arrived—all very beautiful. They are as follows with captions:-

- 1—"Barite Roses. Found at Norman, Cleveland Co., Oklahoma. Sometimes called a desert rose, a concretionary crystal composed mostly of sand and some barium sulphate. About $\frac{1}{3}$ actual size."—three rose colored barite roses.
- 2—"Datolite, porcelaneous variety from the Copper District of Northern Michigan. A

basic orthosilicate of boron and calcium, has a hardness of five, $\frac{1}{2}$ actual size." — 10 polished sections of datolite whose color varies from white to red.

- 3—"White feldspar caps on amazonstone crystals with smoky quartz crystals, from the pegmatite at Crystal Peak, Colorado. Amazonstone crystals are triclinic and composed of a silicate of potassium and aluminum, has a hardness of $6\frac{1}{2}$. About $\frac{1}{2}$ actual size."—this is a very very nice photo showing 3 large greenish-blue amazonstone xls with 4 smoky quartz xls.
- 4—"Marcasite, cockscomb and pinwheel type from the Kansas side of the famous Tri-State District. A disulfide of iron, $\frac{1}{2}$ actual size."—a nice xled group of reddish-brown marcasite.
- 5—"Pyrolusite, found near L'Anse, Michigan. Orthorhombic divergent crystals composed of manganese dioxide. About actual size".—slaty-gray xls.

Wonder what Mr. Pickens will have next!

WITH OUR ADVERTISERS

Conducted by James N. Bourne

c/o Rocks and Minerals. Box 29

Peekskill, N. Y.

Advertisers are cordially invited to submit News Items to this Department

Howard Pate of the Fluorescent House, Beach Place, Branford, Conn., will have a large fluorescent mineral and lamp display at the "Connecticut Gem & Mineral Show" to be held June 25 and 26, 1960, at the American Legion Building, Moodus, Conn.

This fluorescent display as demonstrated by Mr. Pate, is very good and we urge those attending the show to be sure to take it in. You also may purchase from Mr. Pate the new and enlarged 2nd edition of "The Mineralogy of the Portland - East Hampton - Middletown - Haddam area in Connecticut" by Richard Schooner. This book will be reviewed in R&M

From Donald M. Murray, Pres., of Murray American Corp., 15 Commerce St., Chatham, N. J., comes the following:

"Our latest importations from Brazil include aquamarine, blue topaz, crystallized imperial topaz, opal, tourmaline and others. You'll find dealing with us to your liking and our price list is yours for the asking.

"We also have a very fine selection of rough stones from Brazil other than those mentioned above for both gem and tumbling qualities. So please drop us a line as to your needs."

SEARCHING FOR GEMS?

Ernest and Dagmar Beissinger are going to spend part of this summer at their shop in Idar-Oberstein, Western Germany. The Beissingers, known to many of our readers for many years as importers and cutters of precious and semi-precious stones, tell us that they will be glad to personally look after any orders or cutting problems you might have. They will comb the gem centers of Idar-Oberstein and elsewhere in Europe for collector items and rare and unusual gems.

Mr. & Mrs. Beissinger will also look after routine orders such as amethyst, citrine, garnets, agate, cameos etc. Write to them now. Any mail or orders reaching them before July 1st will receive their detailed attention. If you have been doing business with the firm of E. W. Beissinger, 402 Clark Building, Pittsburgh 22, Pa., in the past, you know that

each customer receives complete satisfaction. If you have not done business with the Beissingers, you'll will enjoy doing it now. This is one firm which takes pride in their prompt service and their integrity is beyond reproach. This is your chance to have experts search and work for you. Contact them soon.

Louis H. Roth of Radiant Ultra Violet Products, Cambria Heights 11, N. Y., sends us the following news release:

"Owing to numerous requests on the part of do-it-yourselfers, we can now offer the very-hard-to-get- electrical parts to make your very own 4 watt shortwave and longwave ultraviolet lamps using the very popular U-shaped or bent tubes such as the G4T4/1 and F4T4BL.

"The handy fellow can provide the lamp's housing from a cigar box, metal or bakelite cabinet. These parts sets do not include a filter and/or tube. Tubes and filters are obtainable from us at very moderate prices.

"We furnish all electrical parts, including solder, wire, and rubber grommet, plus an original, simple and fool-proof circuit with valuable hints. You can put together this combination lamp in several hours. It is so easy. For further information on these parts sets, look up our ads this and subsequent issues of R&M or write us at the above address. Prices are moderate and we aim to satisfy."

Note: These lamp parts sets should become quite popular with the do-it-yourselfers who take pride in putting together such items.

Here's an item from George Braun of the Brauns of Ridgefield, Conn., currently advertising each issue in R&M.

"I am leaving Phoenix and Tucson, Ariz., after visiting the finest Gem and Mineral Shows so far. Also bought out two very fine collections from this area.

"I expect to reach Ridgefield, Conn., on or about April 5th and visitors will certainly be welcome to see how much they know about minerals from the Bisbee area of Arizona as well as foreign materials."

Note: Happy to hear of your wonderful trip west and of your arrival home with some excellent purchases of minerals, Mr. Braun.

A nice gold xl in micromount size was sent to us by Frank H. Waskey, Oakville, Wash. The specimen is quite attractive and comes from Kittitas Co., Wash.

Mr. Waskey features Alaskan nuggets of selected gold, platinum, copper as well as silver nuggets from Keweenaw Peninsula, Michigan in his ad regularly each issue of R&M. Thank you Mr. Waskey for the nice gold specimen and would like to pass along to our readers the fact that Mr. Waskey has some very nice specimens from the areas mentioned above and that you might do well by placing an order with him for such. I'm sure that you'll be pleased.

From Joseph P. Stachura, 1766 House, Rt. 146, Quaker Highway, Uxbridge, Mass., we are in receipt of the following:

"We carry a large line of quality jewelry in sterling, gold filled & carat gold. Many types of loose cut gems on hand. Fine diamonds, loose and mounted.

"On hand also are large assortments of jewelry mounted in sterling such as carved and faceted rock xl pendants, earrings, necklaces, bracelets, as well as fine carved ash trays, jade & tiger-eye, plus loose cab & faceted smoky quartz stones. Write us your needs or drop in and pay us a visit when in our area."

Lawrence H. Conklin, 31 West 47th St., New York 36, N. Y., has the following items on hand now for collectors:

"Azurite, brilliant xls on matrix from San Luis Potosi, Mexico; topaz, term. gem xl, Africa; fluorite, green penetration twin xl, Durham, England; diamond, gem xl in matrix, Sierra Leone, Africa; tourmaline, green xld in and on quartz xls, Brazil; malachite, polished slab, Belgian Congo, Africa; ruby, loose xl, Ampanithy, Madagascar.

"We have in stock cutting material as well as cut stones, common and rare for collectors. We are open weekdays from 9-5 (call first if possible) and on Saturdays from 10-3. We will also answer inquiries regarding individual specimens and if we haven't got what you need, why we will do our best to get it for you as it is our aim to please."

Suther's, 74 Brumley St., Concord, N. Carolina, joins us via our display section this issue and we welcome them to the fold.

From Mr. Suther:

"We have a complete Lapidary Supply House and we are importers of some very beautiful stones. We handle Highland Park, B&I Machines, & Allen Facetors.

"Send \$1.00 for our catalog & deduct this amount from your first order of \$10.00. We will be pleased to hear from readers of R&M through our ad this issue and want you to feel free to write us your needs. Prompt attention will be given to all inquiries or orders."

Some very nice tumbled beryl specimens of about 1 inch size was received from Mrs. Helen M. Whitehead of the Monadnock Mineral Shop, Jaffrey Rd., Marlboro, N. H.

A word from Mrs. Whitehead:

"This beryl came from the Island Mine in Alstead, N. H. The mine isn't being worked now but some beautiful blue beryl may be purchased through our ad this issue in R&M."

Note: We thank Mrs. Whitehead of the Monadnock Mineral Shop for the tumbled beryl specimens of nice blue color and we would once more remind our readers that they too may acquire some of this material as mentioned above.

ATTENTION!

Now and then we receive complaints through the mail from subscribers here and there as to their not being satisfied in their dealings with some of our advertisers and dealers as to lateness in replying to their orders or inquiries and as to purchases made.

We would like to comment that we do receive hundreds of satisfied letters yearly from subscribers and feel at times that we are inclined to expect too much for our money and that we are often too impatient in waiting for orders to be filled which is natural, but we sincerely feel that the great majority of our advertisers do their best along these lines and like everyone else, get sick, go on vacations, and have problems too, which might cause delay in reply to your order. We must take in mind also the great distances separating one another, etc.

As a whole however, we are of the opinion that customer-advertiser relationship through the media of R&M is real good and improving all the time.

This in turn gives us all confidence and certainly speaks well of those now engaged in the mineral field in one way or another and shows bright promise for the future.

Make Your Reservations Now!

Sharpen and temper your rockhammers, get a large rock bag, and make your reservations NOW for the 10th annual Eastern Federation Show in Asheville, N. C., August 4, 5, 6, 1960.

North Carolina's worst winter in 45 years means good news for rockhounds attending this year's show. The heavy snows and freezes have caused a maximum amount of erosion—and to the rockhound, that means exposure of more and better specimens. Already a brand new sapphire corundum location has been discovered through this natural phenomena.

THE CHAMBER OF COMMERCE
of
SPRUCE PINE, NORTH CAROLINA

Proudly announces its

SECOND ANNUAL
Mineral and Gem Festival

AUGUST 10, 11, 12, 13, 1960

**at the Harris High School
Spruce Pine, N. C.**

Individual and Club Competitive Exhibits

Dealer Displays

Special Exhibits

Swap Shop

Commercial Exhibits

Craft Room

Lectures and Films

Guided Field Trips

Entertainment

For complete Program and Lodging Information please write to

MINERAL AND GEM FESTIVAL

Spruce Pine, N. C.

Remember 1958!! The huge Eastern Federation Show in Asheville? Well, it's



ASHEVILLE AGAIN!

**10th Annual
Eastern Federation**

Gem and Mineral Show

In Western North Carolina

***“Mineral Showcase
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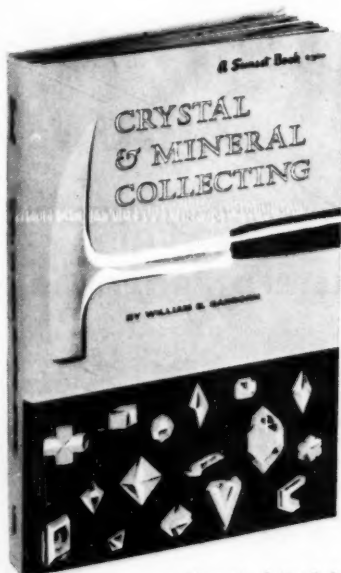
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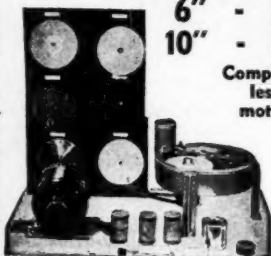
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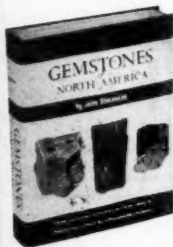


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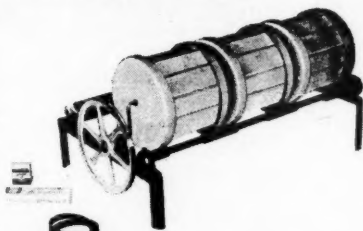
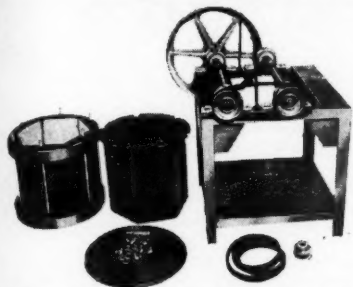
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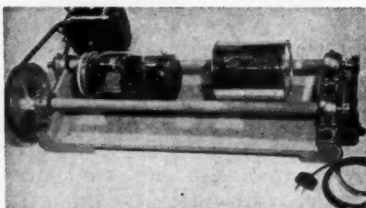
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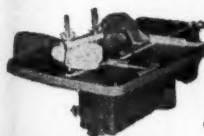
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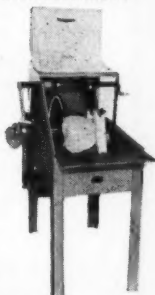
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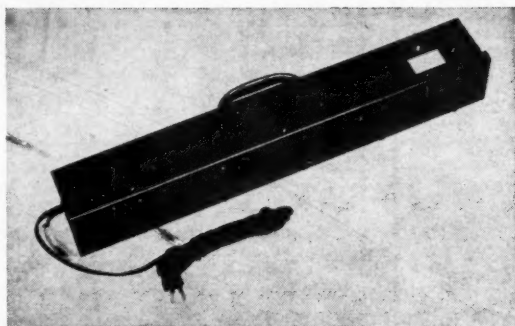
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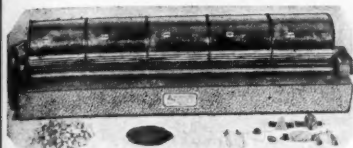
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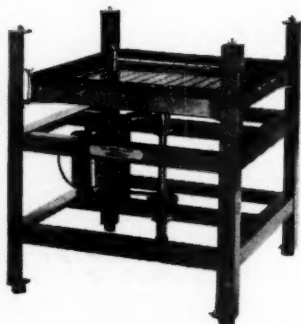
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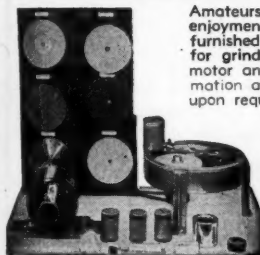
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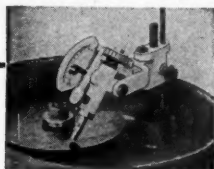
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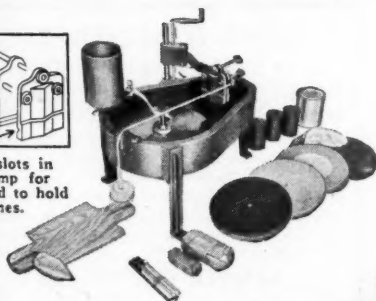
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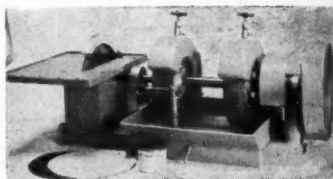
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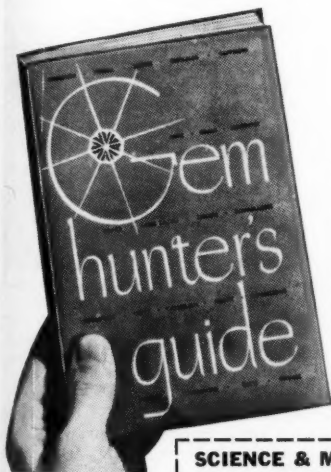
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MINERALS

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MISCELLANEOUS

A NEW STORE IN HACKENSACK, N. J.—In stock are Mineralights, baroques, neck and bracelet chains, cements, cufflinks, tie bars, cabochons, bell caps, keychains, cultured pearls, etc. Open weekdays and Saturdays. Dale Lyn Jewelry, M. W. Avery, Proprietor, 224 Main St., Hackensack, N. J. Phone Hubbard 9-6282.

ROCKHOUND "COLLECTORS"—Contact us for the rare, choice select, odd and unusual. Gemstones, minerals, carvings, fossils, artifacts, relics, etc. Open days and evenings. The Cole's, 551 S.W. Coast Hiway, Newport, Oregon. "Visitors always welcome anytime."

HI-POLISHED BAROQUES—Fisheye agate, amethyst, turritella agate, scenic rhodonite (pink and black), Death Valley agate, apache tears, jaspers, petrified woods, multi-colored tigereye, bloodstone, India green moss, and others. Assortment of above stones - \$4.95 per lb., postpaid. All guaranteed. First grade material. Prices of individual varieties upon request. Hardin's 510 W. Main Cross Street, Findlay, Ohio. GA. 2-5775.

DEALERS—Write for wholesale price lists on our fabulous line of non-tarnishing aluminum chains and findings. If you include \$1.00, samples will also be sent. Please include your tax number with letter. R. B. Berry & Co., 5040 Corby St., Omaha, Nebr.

SANDWICH GLASS—Fragments and chunks dug from old factory site. Wonderful for grinding and polishing for jewelry. 5 pieces for \$1 postpaid. Mrs. Catherine Williams, Box 538, Sandwich, Mass.

CANNED MOTHER OYSTER—In shell with one or more pearls. \$1.75 per can postpaid. Chester Kornegay, 531 Terry Circle, Fayetteville, N. C.

VISIT WEST VIRGINIA'S ONLY MINERAL MUSEUM—Eldersville Road, Follansbee, W. Va. Good mineral specimens xld. and massive. Also jewelry. Jim Smedley.

ULTRAVIOLET ELECTRICAL PARTS—(complete) for 4 watt G4T4/1 or F4T4/BL \$4.50 postpaid. For long-shortwave combination \$5.75 postpaid. Circuit included. Tubes, filters available. Radiant Ultra Violet Products, Cambria Heights 11, New York.

MISCELLANEOUS

WANT TO BUY: Good quality mineral specimens from North Carolina. Single crystals or groups. Small lots or individual specimens desirable. Write full details to Box 504, Borough Hall Station, Jamaica 24, New York.

GEMOLOGIST—H. E. Chelf, Connoisseur of Gems & Minerals. 3710 N. Harmon Ave., Peoria, Illinois. Warsaw Geodes & So. Ill. fluorite.

MEXICAN CUTTING MATERIAL SPECIAL

—2 lbs. sagenite lace, 2 lbs. crazy lace, 2 lbs. black plume (also fls.), 1 lb. bird of paradise, 1 lb. nodules, \$10.00 postpaid. Tax included. We sell at wholesale to bona fide dealers. Send for price list. Gemarts and Rocks, 3315 Tyler Avenue, El Paso, Texas.

OUTSTANDINGLY ATTRACTIVE BRACELETS

—#409 has nine different polished gemstones hanging from chain. #410 has ten stones mounted flat on chain. Individual display card identifies and gives source of each stone. \$2.50, tax and postage included. Matching necklace \$3.50. Dealers and jobbers—We manufacture a complete line of baroque gemstone jewelry which is especially successful in the souvenir and novelty trade. Inquiries welcome. GEO-GEMS, 17953 Duncan Street, Reseda, California.

RIKER MOUNTS—Glass covered specimen boxes, cotton filled for valuable specimens, gems. All sizes. Send for price list. Breeders Equipment Co., Flourtown, Pa.

GOING TO THE MID-WEST FEDERATION CONVENTION

—To be held in Ishpeming, Mich., next July 1, 2, 3, & 4? If so, now is the time for inquiries. You may contact Bob Schenk of Schenk's Rock Shop as to the rental of cabins during convention dates. My son and I are also on the Field Trip Committee as guides. We also have specimens & finished jewelry for sale and trade at our Rock Shop, so you see—we can serve your needs in many ways. Send your inquiries now before the rush begins—to Schenk's Rock Shop, Rt. 1, Box 71, Witch Lake, Republic, Michigan.

COLORADO IGNEOUS ROCKS—Complete your Rock and Mineral collection with eighteen geologists samples, classified, information, chart. All for two dollars postpaid. Satisfaction or refund. Edward Oler, 3017 Stuart Street, Denver 12, Colorado.

MISCELLANEOUS

INTERESTED IN ADIRONDACK MT. ROCKS & MINERALS, EXPLORING, VACATIONING

—We are located on U.S. Rt. 9, 5 mi. north of Chestertown and offer modern cabins, family units, spacious grounds, tent sites, and coffee shop. I am a licensed Adirondack Guide for hunting, fishing & prospecting parties. Our Mineral Shop features many fluorescent specimens, crystals, cutting material etc. You will thoroughly enjoy the time spent in this geologically interesting area with its garnet deposits, rare blue calcite, vesuvianite, fluorescent anorthoclase, labradorite. You will be interested in all the famous Adirondack attractions, as well as the lakes, mountains, fishing, prospecting. So make your plans now to stay with us while in this area and if you can't stay, at least stop in and say hello. Roy Snyder, Adirondack Cabins, Rt. 9, Chestertown, N. Y. Phone 2420.

ORIGINAL ROCKHOUND CAR PLATES

—\$1.00 each. Dealer discount. Agatized coral, 2 lbs. \$2.50, polished halves \$1.00 up. Crystals. Postpaid. Roder's Coral Museum, R 7, Hot Springs, Ark. 6 miles out north 7.

IVORY TUSK SECTIONS, SOUTH AFRICA

—Carve bracelets or cut into cuff links etc. Approximate size 3" diameter, 1/2" thick with 2" tapered hole through center. 75¢ each postpaid. Paul Chase, 3816 Collingwood S.W., Grand Rapids 9, Mich.

ATTENTION ADVERTISERS—When figuring cost of a classified ad, be sure to include your name and address.

FOR SALE—Established Mineral and Lapidary business, jewelry wholesale and retail. 1500 mineral specimens, 150 fossils, fine fluorescent collection; plus petrified forest. Set up on educational basis. 75¢ admission. No competition. Business increasing yearly. 565' x 300', Coastal Route 1. New building, erecting another. Near airport. Reason ill health. A sacrifice. Must be seen for appreciation. Contact for further information: Alfred J. Messier, Fossil Gardens, Wiscasset, Maine.

BUSINESS FOR SALE—Rock Shop, complete lapidary equipment & Supplies, long established on main California highway. Large lot, modern building, living quarters. Terms. Write: Box M, c/o Rocks and Minerals, Box 29, Peekskill, N. Y.

PROSPECTOR'S PICK—Forged steel 8 1/4" head. Lightweight hickory handle. \$3.50 postpaid. Breeders Equipment Co., Flourtown, Pa.

MISCELLANEOUS

ATTENTION GIFT & CURIO BUYERS—

First quality tumbled stone jewelry, preform and baroque style. Substantial discounts given for quantity purchases. Dealers & jobbers write for free price list. Red Wing Co., Manufacturing Jewelers, Rt. 2, Box 25 A, Parker, Col.

ASSAYS—\$8. Complete, accurate, guaranteed. Over 55 elements detected. Rare earth and uranium included, no extra cost. Amounts and values reported. Fast service. Registered engineers. Reed Engineering, 620-J So. Inglewood Ave., Inglewood 1, Calif.

OBSIDIAN - NEVADA — Obsidian slabs, black 5" \$1.00, brown 4" \$1.00, postpaid. Pinon Rocks, Rt. 2, Box 150 A, Bishop, Calif.

STONE INDIAN TOMAHAWKS (COMPLETE)—\$5.00 each & up. Dixie Minerals Co., 3405 Grand Ave., Fort Smith, Ark.

MEXICAN TUMBLING MATERIAL SPECIAL—Package #3: 5 lbs. eye agate beans, 5 lbs. crazy lace, 5 lbs. nodule pieces, \$12.00 postpaid. Gorins' Gemarts and Rocks, 3315 Tyler Avenue, El Paso, Texas.

ULTRAVIOLET LIGHTS—Make your own. For beautiful fluorescent mineral displays, prospecting, etc. Handbook tells how. Easy, inexpensive. Send \$1.00. Transspace Laboratory, Box 111, Princeton Junction, New Jersey.

OPERATE ROCKHOUND - WILDCRAFTER SUPPLY AGENCY—Buying, selling, trading minerals, rocks, sands, soils, fossils many other "Wildlings". Let Mother Nature finance you. Suppliers' Bulletin 25c; details 4c. Bill McCampbell, Calexico (since 1929), Calif.

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HERKIMER & ARKANSAS "DIAMONDS"

—Red garnets, golden apatites, selenites, gold, silver, sapphires, pyrites 10 for \$1.00. Ellenville crystal clusters 25c up. Fluorescent rainbow rocks 40c lb. 5 lbs. free with Mineralight. Large mineral collection for sale 50c lb. Postage. Monroe Mineral Store, Lake Road, Monroe, New York.

ARIZONA APACHE TEARS—Field run. None larger than 1 in. at \$2.75 a lb., 5 lbs. and over \$2.50 lb. 100 lbs. field run \$25.00, small 100 lbs. \$40.00. Va. fairy crosses, small to med., \$3.00 doz., \$20.00 per 100 & postage or freight. No catalogue. Satisfaction guaranteed. All excess postage returned. Mother Nature Art Shop, Rt. 4, Box 4380, Mesa, Ariz.

BLACK HILLS MINERALS—Stop in and see our fine selection in the "Wonder Hotel of the West". Inquiries invited. Gretchen's, Sheraton-Johnson Hotel, Rapid City, S. D.

GOOD USED SAW BLADES—Bronze sintered rim 8 inch \$2.50 and \$3.50. Notched rim 10 inch \$3.00 and \$4.00. Lake Superior agate, rough, slabbed, and tumbled polished. "The Pickels" 1304 Jefferson, Burlington, Iowa.

BAROQUES, MIXED STONES—\$2.00 lb. Mexico agate \$6.00 and up. Rough aporhyolite \$1.00 lb. New Address: A & B Mineral Shop, 2412 Rockhurst Ave., Ogden, Boothwyn, Pa.

UTAH GEODES—Lined with clear quartz crystals and/or blue-white fluorescent chalcedony. No. 1 hand picked regular shape 3" to 8" diameter \$60. per 100 lbs. No. 2 Irregular, twins, oblongs and small \$20. per 100 lbs. No. 3 Punctured and broken pieces \$15. per 100 lbs. Special Offer 50 lbs. no. 1, 25 lbs. no. 2 and 25 lbs. no. 3 \$35. Mined from the original beds that made Dugway Geodes famous now private property closed to the public. L. O. Turner, 355 West 1st North, Provo, Utah.

GENUINE, POLISHED—Virginia Fairy stones with legend. \$1.00 ea. or 5 for \$3.00 (asst). Stones, Box 1888, Roanoke, Va.

DINOSAUR GASTROLITHS—Polished 100 million years ago in a dinosaur gizzard. One dozen assorted sizes up to two inches and 1/2 pound dinosaur bone \$2.00 prepaid. Free circular information on dinosaurs and Wyoming fluorescent material. B. J. Keys, Box 572, Worland, Wyo.

SAND

START SAND COLLECTION—50 different sands, many States, nifty collection, 3 dr. envelopes. \$5.00 postpaid. Glen E. Kiser, Douglass, Kansas.

250 VARIETIES SAND, U. S. and Foreign. Want to trade for minerals, particularly t-n's, not cutting stuff. Glen E. Kiser, Douglass, Kansas.

MINERAL SPECIMENS

At this time over 200 species are available at our office or by mail. We do not issue price lists, but will gladly answer inquiries regarding individual specimens.

Our stock includes items priced at less than one dollar and museum quality specimens costing hundreds of dollars; we have common minerals such as Agate and rare specimens such as Diamond crystals in matrix, and are constantly adding to our stock.

Please drop in any weekday from 9 - 5 (we should appreciate a call first if possible) or Saturday from 10 - 3.

We are always interested in buying a choice specimen, or even a whole collection, and we will exchange too.

Also in stock are cutting materials and cut stones, common and rare, for collectors.

Here are a few items which are on hand now:

WULFENITE, yellow xls. on white Calcite. 4 x 2 1/2" Chihuahua, Mexico \$9.00.

AZURITE, brilliant xls. on matrix. 4 x 2 1/2" San Luis Potosi, Mexico \$9.00.

SPHALERITE, well xld on matrix. 4 1/2 x 3 Alston, Cumberland, England \$7.50.

EUCLASE, greenish uncleaved xl. 5/16" Minas Geraes, Brazil \$2.50

STAR SAPPHIRE, greenish compound xl. 1 x 3/4 Bangkok, Thailand \$3.00

TOPAZ, term. gem xl. 1 3/4 x 3/4 South West Africa \$17.50

BARITE, xld. on matrix. 2 1/2 x 2 1/2 California \$2.00

BARITE, group of tabular xls. 5 x 3 Westmoreland, England \$7.50

FLUORITE, green penetration twin xl. 1 x 1 Durham, England \$2.00

BRAZILIANITE, loose xl. 1 x 1 Minas Geraes, Brazil \$3.00

SAPPHIRE, doubly term. greyish xl. 2 x 1 Ceylon \$7.50

RUBY, loose xl. 1 1/4 x 1 1/4 (Ampanihy) Madagascar \$3.50

SPODUMENE, var. Kunzite, loose xl. 3 x 1/2 Pala, Calif. \$4.00

FLUORITE, colorless, xld 3 x 3. Derbyshire, England \$4.50.

MALACHITE, polished slab. 3 x 2 Belgian Congo, Africa \$10.00

MORGANITE, deep pink xld. mass. 2 1/2 x 2 1/2 Minas Geraes, Brazil \$75.00

CELESTITE, fine large xls. on matrix. 5 1/2 x 6 Enna, Sicily \$35.00

AMETHYST, group of large xls. 6 x 8 North Carolina \$35.00

VANADINITE, xld. on rock. 6 1/2 x 3 Globe, Arizona \$10.00

SIDERITE, xld. on Quartz 4 x 4 Cornwall, England \$4.50

SIDERITE, xld on Quartz 4 1/2 x 4 Allevard, France \$8.00

TOURMALINE, green, xld. in and on Quartz xls. 3 x 2 M. G., Brazil \$25.00

WULFENITE, stout orange xls. w. Calcite 2 x 1 1/4 Chihuahua, Mexico \$4.50

QUARTZ, compound xl. enclosing Tourmaline 2 1/2 x 2 M. G., Brazil \$8.00

QUARTZ, large xl. showing fine Phantom. 3 x 2 1/2 Diamantina, Brazil \$12.50

Mail order customers: Please add sufficient money to cover postage and insurance, and we will refund difference, if any.

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31 West 47th Street

Plaza 7-2264

New York 36, New York

Special Offerings of Rocks & Minerals for Comparison Purposes

POSTPAID ANY 10 FOR \$1.50 — ANY 50 FOR \$6.00 — ANY 100 FOR \$10.00
All specimens are approximately 1" in size, except as noted. Each specimen is fully labeled as to name of mineral, major associates and locality. Each is wrapped individually with its label.

GROUP NO. 1—MINERALS OF ECONOMIC INTEREST—70 Specimens for \$7.00 postpaid!

Autunite	Azurite	Bentonite (in Vial)	Cerussite	Pentlandite
Talc	Kyanite	Hausmannite	Cinnabar	Rhodo-chrosite
Beryl	Realgar	Amblygonite	Hematite	Anglesite
Borax	Alunite	Vermiculite	Chromite	Malachite
Halite	Cuprite	Bastnaesite	Stibnite	Magnetite
Pyrite	Bornite	Smithsonite	Ilmenite	Collophane
Sulfur	Braunite	Sillimanite	Columbite	Chalcocite
Quartz	Enargite	Molybdenite (in Vial)	Diatomite	Polyhalite
Galena	Smaltite	Arsenopyrite	Magnesite	Pyrolusite
Gypsum	Cryolite	Tetraedrite	Spodumene	Sphalerite
Barite	Goethite	Hemimorphite	Celestine	Andalusite
Bauxite	Limonite	Strontianite	Scheelite	Chrysotile
Calcite	Fluorite	Wollastonite	Carnotite	Garnierite
Brucite	Orpiment	Chalcocopyrite	Covellite	Lepidolite

GROUP NO. 2—GEMS AND MINERALS—\$7.14 postpaid, including F. E. Tax on *D items (70 specimens) *Add 10% F. E. Tax to specimens marked with asterisk *

Rose Quartz	Jadeite*	Ruby Corundum - 1/5"	Amethyst*	Bloodstone*
Franklinite	Opal*	Crystal	Bakerite	Turquois*
Stibiconite	Trona	Monazite (Sand in Vial)	Burkeite	Purpurite
Chrysocolla	Hawthite	Agatized Dinosaur Bone	Jarosite	Jasp Agate
Psilomelane	Ilvaite	Topaz* - 1/4" Crystal	Linarite	Antigorite
Piedmontite	Martite	Grossularite Garnet*	Siderite	Norbergite
Conichalcite	Kernite	Indian Moss Agate *	Allanite	Vanadinite
Dumortierite	Ulexite	Andradite Garnet*	Selenite	Aventurine
Scapolite	Idocrase	Golden Tigereye*	Willemite	Forsterite
Hydrozincite	Inderite	Dendritic Agate	Rhodonite	Pyrrhotite
Aphthalite	Priceite	Opalized Wood*	Allophane	Colemanite
Smoky Quartz	Spurrite	Hydromagnesite	Wulfenite	Mariaposite
Clinzoisite	Mimetite	Nephrite Jade*	Witherite	Jasp-Opal*
Pyrophyllite	Zoisite	Meyerhofferite	Marcosite	Schefferite
		Petrified Wood		

GROUP NO. 3—ROCKS AND ROCK FORMING MINERALS—\$7.02 postpaid, including F. E. Tax (70 specimens)

Tourmaline*	Alabaster	Calcite - Satin-Spar Type	Albite	Microcline
Orthoclase	Diorite	Blue Calcite	Slate	Nepheline
Greenstone	Epidote	Cumingtonite	Chert	Natrolite
Actinolite	Biotite	Anthophyllite	Flint	Tremolite
Travertine	Granite	Jasper Breccia	Chalk	Limestone
Oligoclase	Perlite	Graphic Granite	Tuffa	Anorthoclase
Serpentine	Apatite	Siliceous Sinter	Basalt	Sandstone
Anthraxite	Diopside	Oolitic Hematite	Marble	Omphacite
Glaucophane	Andesine	Almandine Garnet*	Gabbro	Anorthite
Barkevikite	Alurgite	Obsidian (Flowering)	Pumice	Quartzite
Glaucophane	Dolomite	Olivine (Chrysolite)	Augite	Anhydrite
rhadorite	Ronzite	Wonderstone (Rhyolite)	Dacite	Muscovite
Mica Schist	Andesite	Fused Radioactive sand	Aplite	Kaolinite
Prochlorite	Graphite	Bastite	Gneiss	Hornblende

YOU MAY SELECT ANY FIFTY SPECIMENS, \$6.00 **ANY TEN SPECIMENS, \$1.50** **YOU MAY SELECT ANY HUNDRED SPECIMENS, \$10.00**

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Any Two Groups of specimens may be ordered for a combined price of only **\$12.50 postpaid**. **All Three Groups** (210 specimens in all) May be had at a combined price of only **\$18.64 postpaid**.

Collection boxes are available—Study cardboard boxes, 70 partitions in each, large enough to hold specimens to nearly 2" in size—**\$2.25 postpaid—three for \$6.00 postpaid**. Western United States. Groups 1-2-3, shipped with 3 collection boxes—**\$24.64 postpaid**.

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Sturdy 1-piece construction...well designed—quality made. Real bargain. Guaranteed at least 50 in 1/2 oz. bag. Order as:
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POCKET COMPASS Protects against breakage

Has guard chain and protective lid—case is polished chrome-plated brass—46mm diameter. Favorite with many outdoorsmen. Accurate, sensitive. Lightweight—has pointer, stopper, luminosity, jeweled pivot...black and white dial for greater visibility. Super value...makes wonderful gift too!
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10 Beautifully polished Baroque Gems of Citrine Topaz, Amethyst, Rock Crystal, Morganite and Aquamarine. 1/2" sizes...total weight 50 carats.
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Rare, banded Patimelane that looks just like scarce green African Malachite except bands are black. Excellent for cabochons and trays. Excellent specimen. Generous 8 oz. piece at special advertised bargain price!
Only \$1.00
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Intact in Mother Oyster
3 year old, unopened oyster, guaranteed to contain GENUINE CULTURED PEARL suitable for use to you...just open can and remove!
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Everything you need—including 1 pair 1/2" hand-cut faceted genuine Brazilian Rock Crystal sparkling stars, 2 sterling silver ear wires—pair sterling silver earring \$3.50 ready for mounting a normal \$3.50 value. Now yours on our "Let's Get Acquainted" offer.
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a rare offering of TERMINATED specimens from Villa Rica, Brazil. Quantity limited—act now to get a real prize for your collection...it's top quality! 1/2" crystals.....3 for \$1.00

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30 pieces—6 each of 5 popular shapes—for mounting all types of stones. Each cap stamped from single piece of metal...rings can not break off. Good quality—exceptional prices. In 2 leading finishes:
2-41-K Gold color, 30 pieces only \$1.
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Special offering of SPRING RINGS

3 each of 6 different kinds and designs—just what you need to make Gold and rhodium colored—mixed sizes. It's a "lucky 3" game value—1/2" Spring Rings at a big, big bargain!
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7" length...angel wing design. Sterling silver chain and clasp. A regular \$1 value...new only 54¢.
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\$2.30 worth of silver wire for \$1. Offer contains nine 6" lengths of Rd. Bead, Twist, 1/2 Rd. Bezel, 1/2 Rd. Bead, Square, and Round Sterling Silver wire.
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ESTWING PROSPECTOR PICK
Forged all-steel one-piece head...the handle projecting nylon cushion new blue everlasting nylon cushion handle grip—non slip. 13 inches long with 7" head which weighs 22 lbs. or more. Guaranteed unbreakable.
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Superior quality—15 x 20mm—octagon cut—outstanding bargain. Weight of stone...approximately 23 carats. Superb for ring mounting or for your collection!
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Full cash refund if not more than pleased.

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Imported quality
3 huge magnifications—choice of 8x, 12x or 20x. Straight lined to be straight through any part of lens. Tactile value—deluxe! Protective black, (non-glare) heavy-duty folding case.
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Gem cutter's special!

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Popular style, sterling silver mounting...slab is temple-marked to be cut to 12 x 16mm cushion shape...makes gorgeous ring. Mountings available in all sizes from 8 through 13. It's a \$3.50 value—offered special to introduce our "CGS" Slabs.
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High polish, full chrome finish. Chain nose—the most useful jewelry pliers known. Better than most pliers that usually sell for \$2.00.
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A big 2-oz. bag of ass't sizes from 1/2" to 1 1/2". Highly polished gems of Para-Mexican Amethyst, Bird of Paradise Agate, Abalone Rainbow Pearl, etc. Very useful lot of gems for jewelry and for decorating hand bags. Don't pass this value up!
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So good it's replacing rivets
MIRACLE ADHESIVE—you've seen it on TV and in LIFE—it bonds materials stronger than any...it's used in Aircraft industry using and instead of Rivets—replaces many screws. Perfect for jewelry repair! Kit of 2 jars with complete instructions.
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4 Unusual 1 inch polished specimens: Carnelian, Blue, Green, and Gray. Brazilian. Normal Re-Gray. Brazil. All 4 offered on "Let's Get acquainted" spectacular deal.
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FINE MINERAL SPECIMENS

- Native iron**, terrestrial. Dysko Island, Greenland. $1\frac{1}{4} \times 1\frac{1}{2}$ (52 grams). \$7.50. Weimer, Cassel, Germany. Grains in basalt. One face polished. $1 \times 1\frac{1}{4}$, \$5.00. Camp Creek, Montana. Minute crystals, hand picked. One of the world's rarities. Brilliant silver white. In vials. One-half gram, \$7.50. Ten vials only.
- Bournonite**. Cornwall, England. Large crystal about $\frac{3}{4}$ inch across on quartz. Several broken crystals. $2 \times 2\frac{1}{2}$, \$15.00.
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- Barysilite**. Franklin, N. J. Thick masses on matrix, $1 \times 1\frac{1}{2}$ to 2×2 , \$2.00; \$2.50; \$3.00; \$4.00; \$5.00. Several museum grade specimens, $2 \times 2\frac{1}{2}$ to 3×4 , prices quoted.
- Galena**. Horhausen, Germany. Variety steinmannite. Small modified crystals on rock. $2\frac{1}{2} \times 3\frac{1}{4}$, \$4.00.
Suite of six loose crystals, about $\frac{1}{4}$ inch to about 1 inch, showing all modifications from cube to dodecahedron. Various localities. \$7.50. Cumberland, England. Corroded large crystals on quartz. These crystals show solution cavities lined with second generation crystals. Rare. 6×7 , \$20.00.
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- Sphalerite**. Moresnet, Belgium. Section of round ball 4 inches diameter showing concentric layers sphalerite, variety sthalenblende, galena, marcasite. 2×4 , \$6.00.
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